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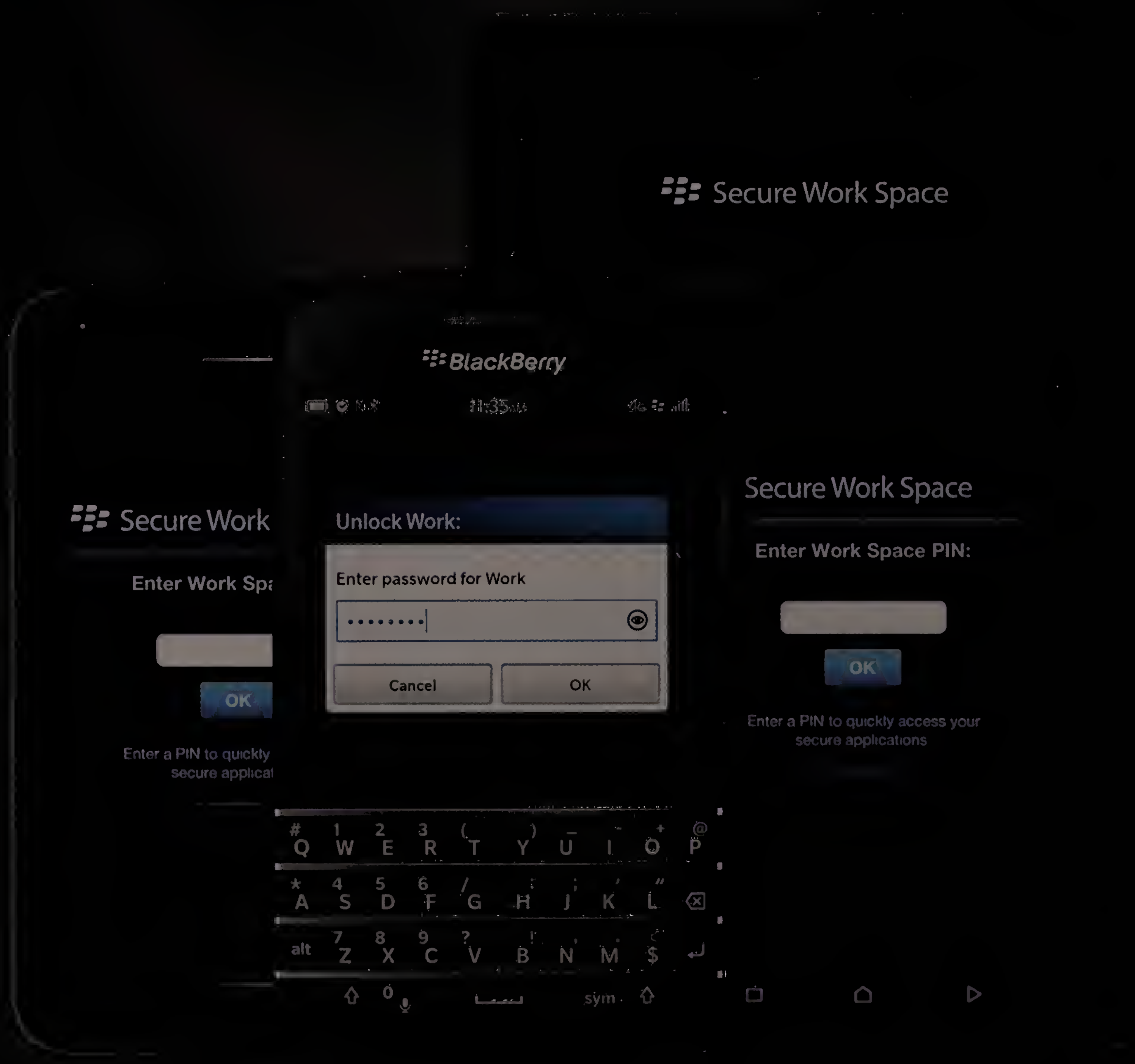

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JONATHAN KANTOR

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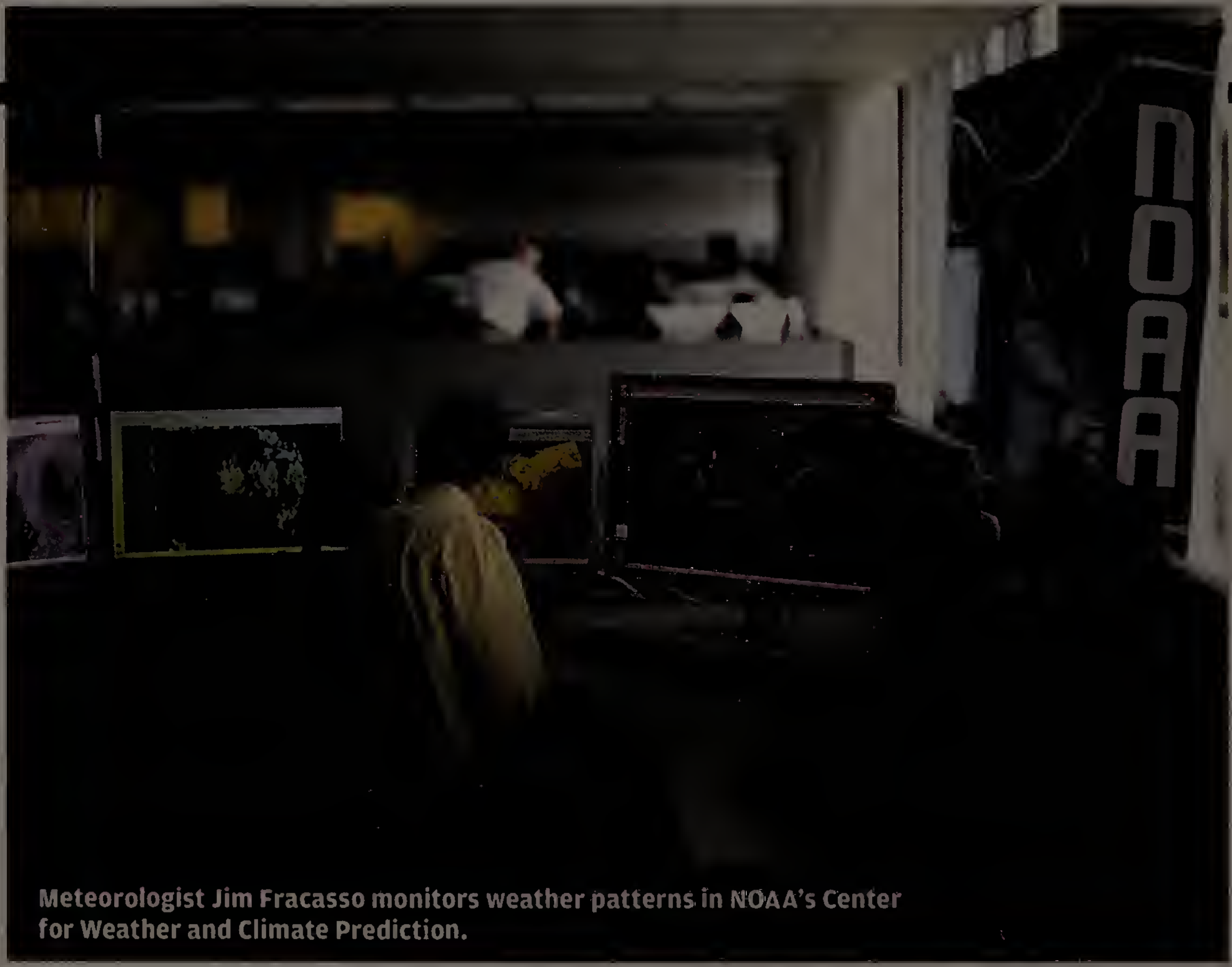
HeadsUp



Meteorologist Jim Fracasso monitors weather patterns in NOAA's Center for Weather and Climate Prediction.

GETTY IMAGES

SUPERCOMPUTERS

NOAA Flips Switch on Weather Systems

THE NATIONAL Oceanic and Atmospheric Administration has switched on two new supercomputers that are expected to improve weather forecasts and perhaps help better prepare us for hurricanes.

The two IBM systems, which are identical clones, will be used by NOAA's National Weather Service to produce forecast data that's used in the U.S. and around the world.

One of the supercomputers is in Reston, Va.; the other is in Orlando. The NWS can switch between the two in about six minutes.

Each is a 213-teraflop system running a Linux operating system on Intel processors. The federal government is paying about $20 million a year to operate the leased systems.

"These are the systems that are the origin of all the weather forecasts you see," said Ben Kyger, director of central operations at the National Centers for Environmental Prediction.

NOAA had previously used identical four-year-old 74-teraflop IBM supercomputers that ran on IBM's AIX operating system and Power 6 chips.

Before it could activate the new systems, the NWS had to ensure that they produced scientifically accurate results. It had been running the old and new systems in parallel for months, comparing their output.

The NWS has a new hurricane model, which is 15% more accurate in day five of a forecast for a storm's track and intensity. That model is now operational and running on the new systems. That's important, because the U.S. is expecting a busy hurricane season.

– Patrick Thibodeau

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IT CAREERS

U.S. Workers Said To Outperform Offshore Staffers

U.S.-based IT and business services workers show more initiative, are more innovative and have a better understanding of the business than offshore workers, according to a new study from consulting firm HfS Research.

These qualities are helping to boost use of domestic IT services, especially as companies move to cloud-based IT systems, HfS said in its report, "Around the World and Back Again: Sourcing Services in the USA."

Domestic workers also work harder than their offshore counterparts, though not by much, according to the report, which is based on a survey of 235 "enterprise buyers" (corporate executives who make or influence business operations and outsourcing decisions) and 270 executives from providers of outsourcing services who invest in locations around the world.

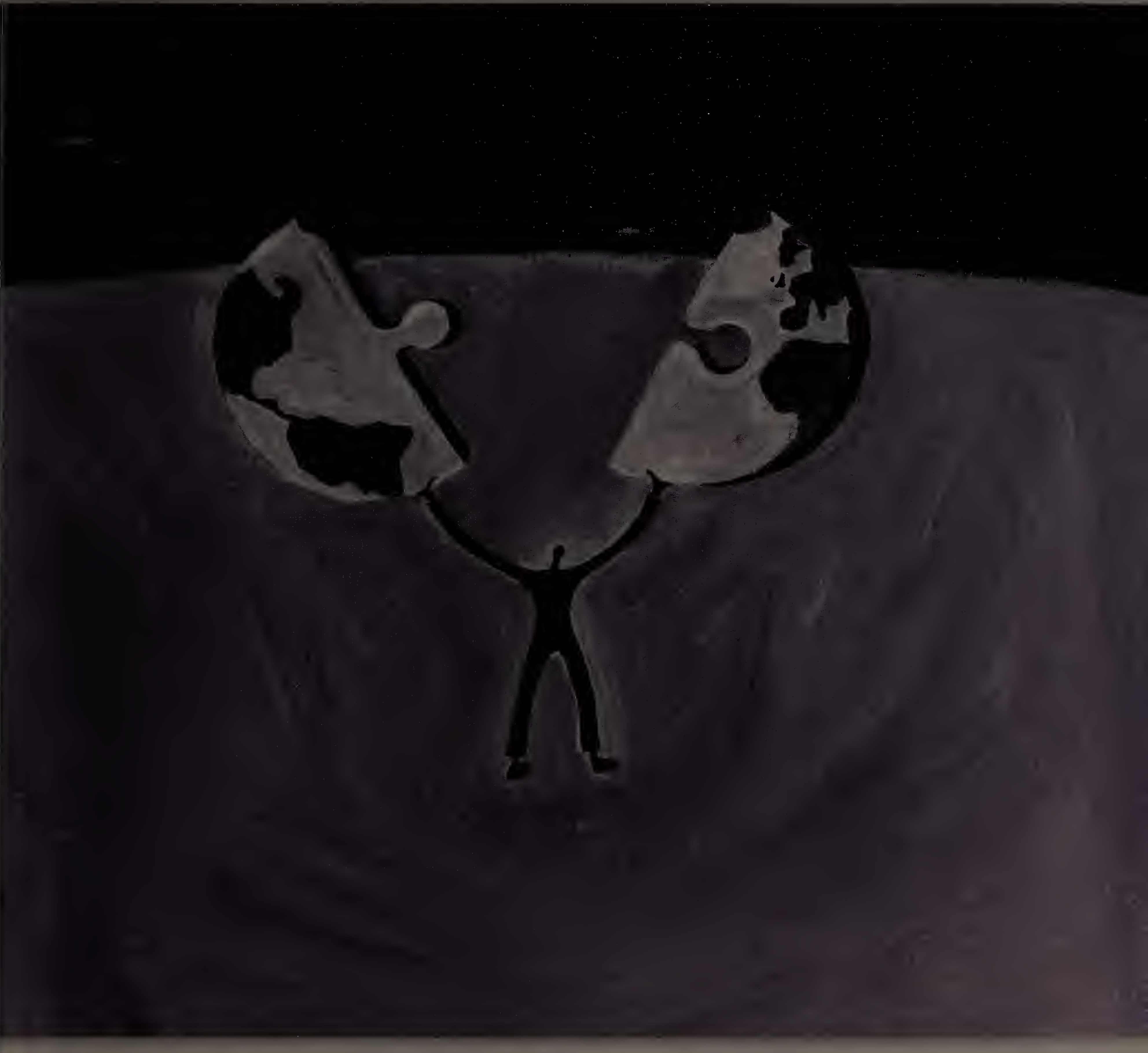
Some 83% of the enterprise buyer respondents said they agreed or strongly agreed that their U.S.-based staffers are "hardworking," while 79% expressed the same sentiment about non-U.S.-based staffers.

"U.S.-based workers more often exhibit skills deemed most relevant to productivity," the HfS report said.

In most areas associated with productivity, survey respondents reported that U.S.-based staffers exceeded offshore staff by wide margins. When the survey looked at specific IT services functions, the findings narrowed some, but U.S.-based workers still came out ahead.

– PATRICK THIBODEAU

How InterSystems invented a database system that combines objects and SQL.



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BETWEEN THE LINES

By John Klossner

www.jklossner.com
HOW'D YOU LIKE to COME UP to MY CAMP THIS WEEKEND AND HELP ME SET UP MY WI-FI?
The I.T. Vacation
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APP DEVELOPMENT

Microsoft Adds Java to Cloud Services

EXPANDING a growing portfolio of enterprise software it sells as hosted services, Microsoft plans to add Java to its Windows Azure cloud service.

"Having support for a Java platform on Azure is something our customers have been asking for," said Gianugo Rabellino, a senior director at Microsoft Open Technologies.

Microsoft will offer the Java Standard Edition (Java SE) by the end of the year, both as a stand-alone PaaS (platform as a service) and as a component of a Windows Server IaaS (infrastructure as a service), as part of Windows Azure service.

For the Java runtime, Microsoft has commissioned Azul Systems to develop and maintain a version of the Java OpenJDK, the reference implementation of the Java Virtual Machine (JVM) and runtime for Java SE. The OpenJDK will also allow customers to run programs written in several JVM languages.

Azul has plenty of experience with Java. The company's flagship product, Zing, is a customized JVM for high-performance use that has been on the market for over a decade, with customers in the financial community.

The addition of Java shows that "Microsoft is serious about running any and every workload," on Azure, wrote Al Hilwa, an IDC analyst. "Azul is an excellent partner that knows open source and can really bring its Java knowledge to Azure cloud enterprise clients."

To date, there have been no commercially supported versions of the OpenJDK for Windows platforms, said George Gould, Azul's vice president of business development.

Oracle itself does not offer Java SE as a service on Oracle Cloud, the company confirmed by email. The vendor does, however, offer the Java Enterprise Edition as a service. Java EE is a Java platform with additional frameworks to ease production use of applications.

Other cloud services do have Java offerings, including CloudBees, Cloud Foundry, Amazon Web Services and Google App Engine.

– Joab Jackson, IDG News Service

Micro Burst

Apple's share of the global tablet market plunged to

28.3%

in the second quarter, down from 47.2% a year earlier, as sales of Android devices surged.

PRIVACY TOOLS

New App Foils Spam With Fake Email Addresses

There's a new weapon available to people fighting the war on spam – one that lets them protect their information by never giving it away in the first place.

The free version of MaskMe, a new tool from Abine, lets people create alias email addresses that they can use instead of their real addresses when websites ask for their contact information.

MaskMe forwards email from the alias address to a person's regular account. Users can shut off the forwarding if they get annoyed with a particular sender. The free version also has a password generator and secure storage for those passwords.

Many of the components of MaskMe are individually available elsewhere. But Abine has put them together into an extension for Chrome and Firefox browsers.

A premium version of MaskMe, available with a $5-per-month subscription, has several other tools, including one that creates "virtual" credit-card numbers that can be linked it to the user's real account and another that creates alias phone numbers.

The subscription makes iOS and Android versions of MaskMe available to mobile users.

– JEREMY KIRK, IDG NEWS SERVICE

Shrink the servers and everything else follows.

It's time to build a better enterprise. Together. Data centers that power the internet can waste 90% of the energy they consume. That's unsustainable. So working with IT leaders, HP has come up with a completely new kind of server: HP Moonshot. It's 80% smaller, consumes 89% less energy, and costs 77% less. Building technology to power the next internet, it matters. **hp.com/moonshot**

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Source: James Glanz, "Power, Pollution and the Internet," The New York Times, September 22, 2012.
HP research comparing Moonshot servers with traditional x86 servers; cost comparison based on estimated total cost to operate. © 2013 Hewlett-Packard Development Company, L.P.

Working Vacations Are an IT Mainstay

IT executives explain why they keep tabs on work email and phone messages when they're supposed to be relaxing. By Patrick Thibodeau

THAT IT PROFESSIONALS WORK ON VACATION is as obvious as sand on the beach. For many, it's accepted as part of the job — and they just might relish the idea that they're indispensable.

In a recent survey of 200 IT pros by TEKsystems, 67% of the senior IT workers polled said that they are expected to be available while they're on vacation.

The IT staffing firm's finding might sound low to some people; many tech career experts say it's likely that as many as 95% of senior IT professionals would have to be on call when they're on holiday.

For IT leaders like Osvaldo de Lima, CIO of ECOM Group, a multinational agriculture commodities trading and processing company, there's no escape from work, just accommodation.

De Lima said he keeps up with email and takes some phone calls during vacations to avoid facing a glut of messages when he returns to the office. "[It's] to my own benefit," he said.

However, he does delegate key tasks to staffers as much as possible. "Trust the team," de Lima said.

A vacation still means spending time with family and not commuting to the office, but de Lima never fully puts work aside. "That's the nature of our job; that's the profession that we chose," he said.

"Work will always impede upon my vacations to some degree," said Brian Kelley, CIO of Portage County IT Services, in Ohio. Like de Lima, he said checking in makes the return easier.

If he handles some work while on vacation, Kelley said, "catching up will not be a major headache."

A Harris Interactive survey of nearly 2,100 adults last month found that about 54% of managers expect that employees will do some work during a vacation. The survey was commissioned by Ricoh Americas.

Elizabeth Cogswell Baskin, CEO and executive director at Tribe, an internal communications agency, said that many employees will stay connected to work when they're away from the office, but she said they should be encouraged to do otherwise.

"When employees stay vigilantly aware, especially in the age of constant digital connection, it keeps them in a state of high alert," Baskin said. "That keeps them from getting the necessary time to relax and recharge."

Kyri Sarantakos, vice president of engineering at TheLadders, an online job-matching service, said his company makes sure that the tasks of vacationing workers are covered.

"We like to avoid a single point of failure," he said. As for his own vacations, Sarantakos said he tries to minimize the disruptions. For example, he won't dial into conference calls unless they're addressing critical issues, like key hiring decisions.

TheLadders has a flexible and unlimited vacation policy and encourages people to take time "to recharge and find renewed energy and enthusiasm for the work ahead," Sarantakos said.

Pierluigi Stella, CTO at Network Box USA, a managed security services firm, has one policy for himself and another for the people he manages. "I cannot spend a whole day detached from the office," he said. "My vacations, few and far between, are always in places where cellular phones work."

But regarding his staff, he said, "If they are in vacation, they are in vacation. I expect them to be detached and unavailable as much as possible." ◆

> “ Work will **always** impede upon my vacations to some degree.

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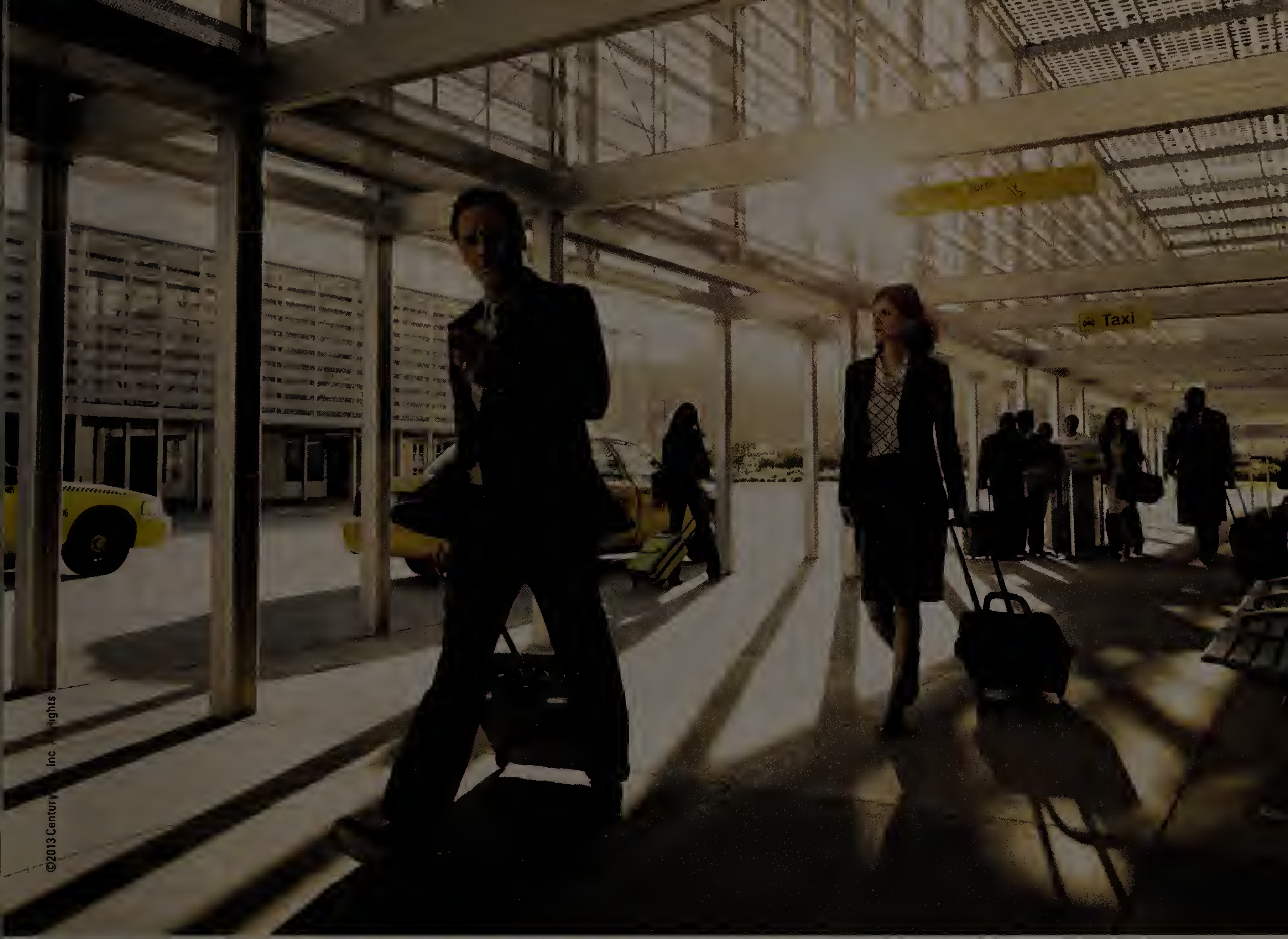

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Steve Ballmer discusses Microsoft's devices and services strategy at the company's Build developers conference in June.

Ballmer Pushes 'Family of Devices'

Despite disappointing financial results and the Surface RT tablet debacle, Microsoft is moving ahead with plans to dramatically expand its hardware offerings. By Gregg Keizer

IF WORDS MEAN ANYTHING, Microsoft will soon dramatically expand the number — and type — of hardware devices it makes in-house, and one day those devices will all run the same Windows iteration.

In a memo posted last month on Microsoft's website, CEO Steve Ballmer used the phrase "family of devices" 10 times in an update of the company's yearlong "devices and services" strategy.

The memo, which outlined a reshuffling of Microsoft product lines and executives into four new engineering groups and a centralizing of business decisions previously made by separate fiefdoms, dwelled extensively on hardware plans.

"Going forward, our strategy will focus on creating a family of devices and services for individuals and businesses," Ballmer stated in the memo. "We will design, create and deliver through us and through third parties a complete family of Windows-powered devices."

Ballmer told reporters and analysts in a conference call later that the range of in-house and third-party devices will encompass "the very smallest [and] the very largest devices."

The memo was posted just a week before Microsoft reported lower-than-expected fourth-quarter financial results and announced that it is taking a $900 million charge to account for a drop in the inventory value of ARM processor-based Surface RT tablets.

Despite the tablet woes, Microsoft is "firmly a hardware company," said Frank Gillett, an analyst at Forrester Research. "They don't need to play in the entire ecosystem, but they must have so-called hero devices — ones that show what their software can do."

Gillett saw Microsoft's write-down as just one piece of a larger transition from packaged software to devices and services, with the devices piece exemplified by the Surface product line and the services component epitomized by the company's move toward selling its software as a service.

"Even if Microsoft is making all the right decisions in the transition, it's still a fundamental shift," Gillett said. "No matter what, it's a messy process."

Microsoft will move on, in other words, after the Surface RT flop, seeing it as not a company-killer or even as a reason to change its strategy, but as one of several obstacles it will encounter in the coming years. "This is early in the [Surface] product cycle," Gillett observed. "This is just the beginning of at least a two-year slog."

"What [the Surface RT overstock] really shows is that being an OEM is . . . a lot tougher than Microsoft thought it was," added Patrick Moorhead, an analyst at Moor Insights & Strategy.

Meanwhile, Ballmer's memo also — indirectly — indicated that the company's goal is for Windows and Windows Phone to be essentially the same operating system. "Developers must be able to target all our devices with a common programming model," he wrote.

Currently, Windows 8, Windows RT and Windows Phone share a kernel, but they don't share a complete code base; apps written for Windows 8 and Windows RT can't run on Windows Phone 8, and vice versa. A "write once/run many" model would give Microsoft an advantage that even Apple doesn't enjoy: Apple's iOS apps are incompatible with OS X.

"Having all the OSs under one roof was long overdue," said Bob O'Donnell, an analyst at IDC. ◆

> Even if Microsoft is making all the right decisions in the transition, it's still a fundamental shift. No matter what, it's **a messy process.**

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THE Grill

Scott Blanchette

This IT leader built a professional services group from the ground up.

What's your favorite tech toy? Anything Apple. Greatest tech company on Earth.

Do you have any hobbies? Mountain climbing is probably the most prominent. I would like to get through five of the Seven Summits. I've done Kilimanjaro, and I'm planning on doing Mount Elbrus in Russia.

What books are on your current reading list? *The CIO Paradox*, by Martha Heller, and *Competing on Analytics: The New Science of Winning*, by Thomas H. Davenport and Jeanne G. Harris.

If you weren't in IT, what would you do? Work with disabled veterans or teach school in the inner city.

SCOTT BLANCHETTE *got a big nod from fellow IT professionals this spring, when he won the prestigious 2013 CIO Leadership Award at the 10th annual MIT Sloan CIO Symposium. The award recognized Blanchette, senior vice president of IT services at Nashville-based Vanguard Health Systems, for delivering business value and for innovative use of IT. Blanchette's undertakings include joining with other Vanguard Health executives in 2012 to found Hangar9 Solutions, an IT services company that provides infrastructure and computing services to small and midsize healthcare organizations, including Vanguard.*

The criteria for winning the CIO Leadership Award include the ability to demonstrate the value of IT services to the people who pay for them. How do you do that? Transparency, and certainly transparency of pricing for services delivered. There's also an imperative to provide a context through benchmarking and other forms of analysis to

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> **“If I’m not able to provide a service of value at a price point** [that the business units] believe reasonable, I don’t want to hold them hostage.

help educate consumers on what they’re receiving at what price points and how that compares to what they can acquire in the open market. There was a clothier when I was a kid, Sy Syms, who said, “An educated consumer is our best customer.” I spend a lot of time driving toward that same goal in IT.

Has any Vanguard business unit looked elsewhere for IT services? Yes, and we encourage that sort of exploration because, as a service provider, if I’m not able to provide a service of value at a price point they believe reasonable, I don’t want to hold them hostage. We think we’re always going to be the most competitive alternative, especially when it comes to alignment with the business and its objectives and strategies.

Has anyone ever gone with an external provider? No, not for our core services.

How do you educate yourself about what the business needs? Unlike a third-party service provider, we’re all incentivized around the organization’s [financial performance]. So while we run independent or interdependent units, we operate under a singular umbrella organization. The other piece is we’re keenly focused on the unique attributes of our different operating units, some of which are hospitals, some of which are clinics, some of which are health plans. We have a diverse portfolio of assets, and we understand them better than others.

How do you improve IT’s understanding of the business units? We’re fairly central to the strategy development process. We’re definitely involved from the beginning in articulating the strategy and the desired outcomes. We’re involved in the implementation of services and solutions that help achieve them. And we’re part of the rationalization process in the end, when we evaluate our successes and failures as a business and not just a service provider. Being part of that entire continuum is extremely valuable. I think we have a very prominent seat at the table.

How do you make yourself a trusted partner? Delivering exceptional results is central to being a credible partner. You have to understand the business, the opportunities for technology to influence or impact the successes of the business. You have to be sound at executing and delivering results, and you have to have the other tenets you expect — vision, inspiration and perspiration. But fundamentally it’s about ensuring exceptional delivery of positive business results.

What are your biggest technology initiatives at the moment? Initiatives to help drive business growth. We’ve invested in consumer-directed analytics and a consumer relationship management solution that few others have in healthcare, so CRM and growth-related initiatives are by far our most prominent focal point. The second is around usability and mobility of our systems — the consumerization of IT, with a keen focus on usability and mobility.

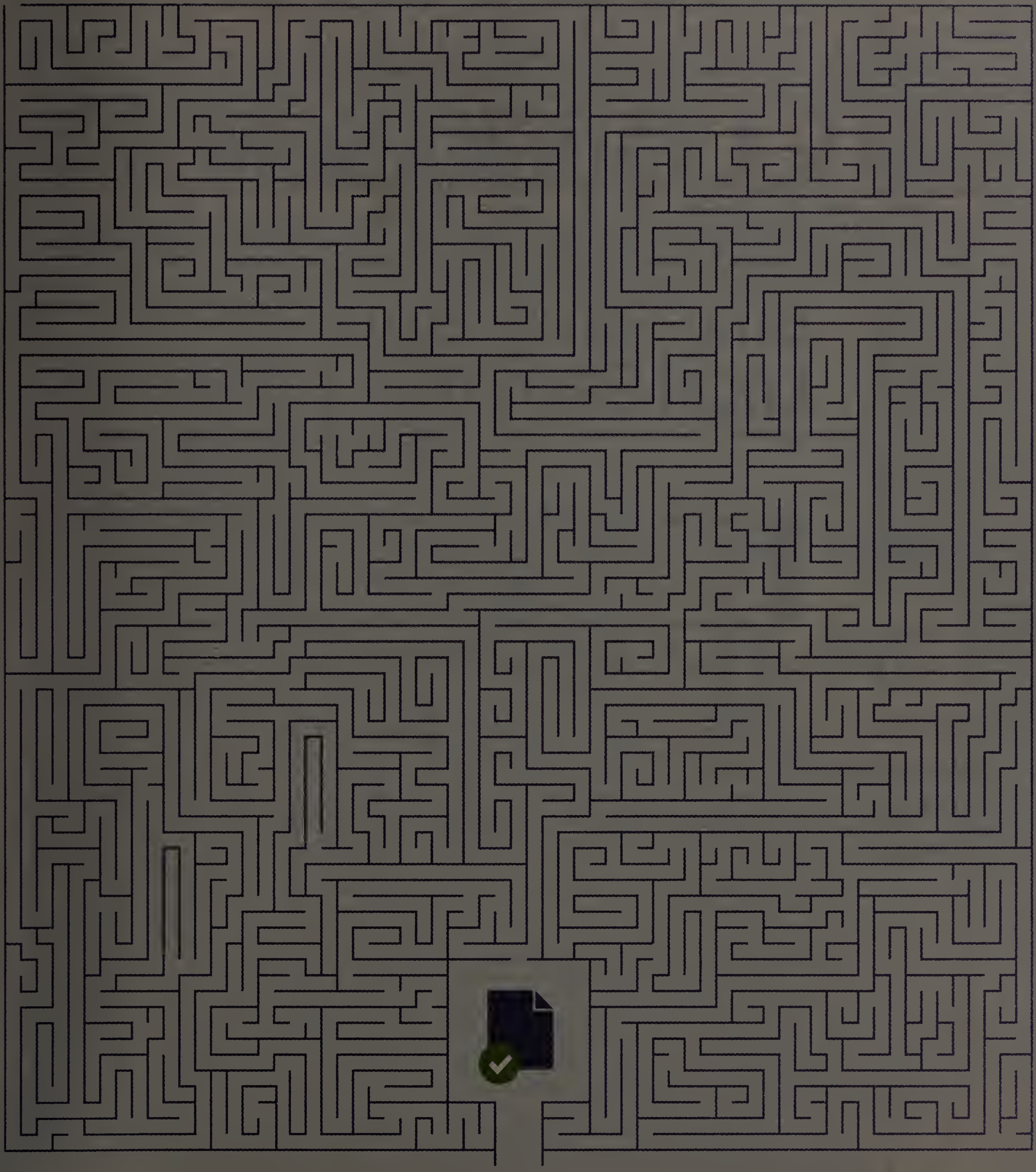
And what’s your biggest challenge? The macroeconomic headwinds in the healthcare industry are very challenging in calendar year 2013. It certainly impacts growth, and it just influences the overall general outlook for the industry and that creates a lot of focus and discipline that we really need to be successful during a transition into healthcare reform.

What does that mean for your IT organization? Probably one of the prominent examples would be a focus on rates of return on invested capital. And ensuring that we are only making high-value investments that create some form of quantifiable returns — either financial or clinical, or hopefully both. And being exceedingly disciplined about that is critical.

You’re also founder and president of Hangar9. How has that experience shaped you as a CIO? It’s less critical how it’s shaped me than it is how we’re shaping the organization. We wanted to implement a professional services culture here and emulate the professional services relationship wherein our customers could go buy from any other respectable supplier that’s frequently absent from internal IT departments.

What characteristics are typically absent? Establishing some boundaries around a scope of service, agreeing on service levels, and establishing service-level agreements and providing pricing transparency for the scope of services. And the benchmarking piece is valuable for furthering the trust relationship.

— *Interview by* Computerworld *contributing writer* **Mary K. Pratt** *(marykpratt@verizon.net)*



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OPINION

S.J. VAUGHAN-NICHOLS

Bing-Bang-Bungling Local Search

> "Search in Windows 8.1 will use Bing to deliver targeted ads, even when searching local drives.

TALK ABOUT HAVING THINGS BOTH WAYS! A few months ago in its "Scroogled" ad campaign, Microsoft was complaining about how Google uses your search terms and Gmail contents to deliver targeted ads. Now, Microsoft is touting how Windows 8.1 uses your search terms to deliver targeted ads, even when you're doing searches on local drives.

Do people at Microsoft ever talk to anyone outside their own groups? Does the Bing team need to be introduced to the Scroogled team? Scroogled? How about Bing-Bang-Bungled?

Windows 8.1 is still in preview, but when you do a local search in it, your results will include both local and Bing-provided hits. Microsoft will then use your search terms for targeted ads.

For Microsoft, this is decidedly a feature, not a bug. David Pann, Microsoft's general manager for the Search Network, wrote: "Bing Ads will be an integral part of this new Windows 8.1 Smart Search experience. Now, with a single campaign setup, advertisers can connect with consumers across Bing, Yahoo! and the new Windows Search with highly relevant ads for their search queries. In addition, Bing Ads will include Web previews of websites and the latest features like site links, location and call extensions, making it easier for consumers to complete tasks and for advertisers to drive qualified leads." He continued, "Our goal is to make search advertising easier for our customers, while providing the best consumer experience with the most relevant results for the tasks they are looking to accomplish."

It all sounds wonderful — if you're an advertiser. I don't think it's what users expect from a "local" search, though. Sure, anyone who's paying any attention at all expects their every move to be tracked on the Web, but this is built into PC search. In a way, Microsoft is incorporating spyware into local search.

Imagine that you're a Microsoft competitor who uses Windows 8.1. Do you want Microsoft to know what you're searching for on your PC or corporate intranet? I don't think so!

I'm not saying that this type of functionality is unprecedented. Google has long incorporated that kind of capability in Android and Google Instant search. But it's a new move for Microsoft. Ever since its '90s antitrust trial, Microsoft has steered clear of incorporating Internet functionality in its Windows operating system. Twenty years on, however, with the PC on the decline and mobile devices and the cloud ascendant, everyone is integrating Internet services into their products, and Microsoft wants to do the same.

What sticks in the craw is that this comes so closely on the heels of Microsoft blasting Google for peeking at users' information for the sake of targeted ads.

Fortunately, you can turn this functionality off without much trouble. What you can't do in the preview — but what you can do with any Web browser — is pick a different search engine. If you want to use Internet search within Windows 8.1, it's Bing or nothing.

I don't know. Maybe people won't care. Goodness knows they seem indifferent to the revelation that the NSA is peering over their shoulders. Perhaps they'll be as nonchalant about sharing all their local searches with Microsoft — even if Microsoft did claim to think that such activity was just awful only a few months ago. ◆

Steven J. Vaughan-Nichols has been writing about technology and the business of technology since CP/M-80 was cutting-edge and 300bps was a fast Internet connection – and we liked it! He can be reached at sjvn@vna1.com.

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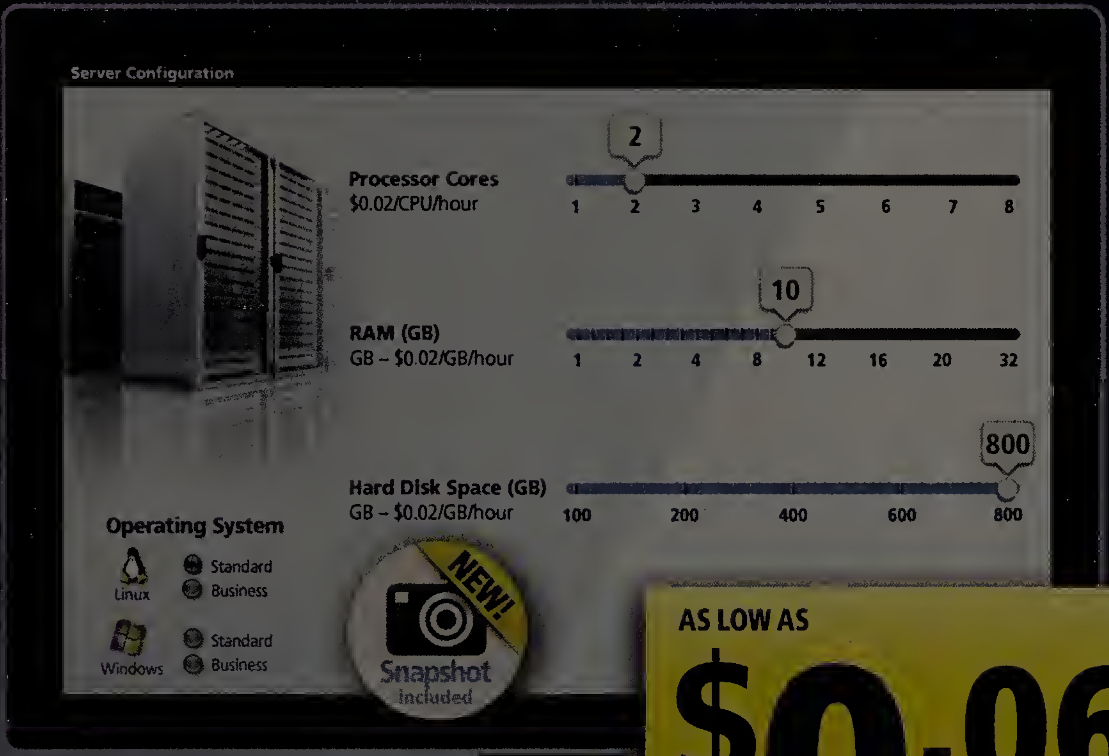

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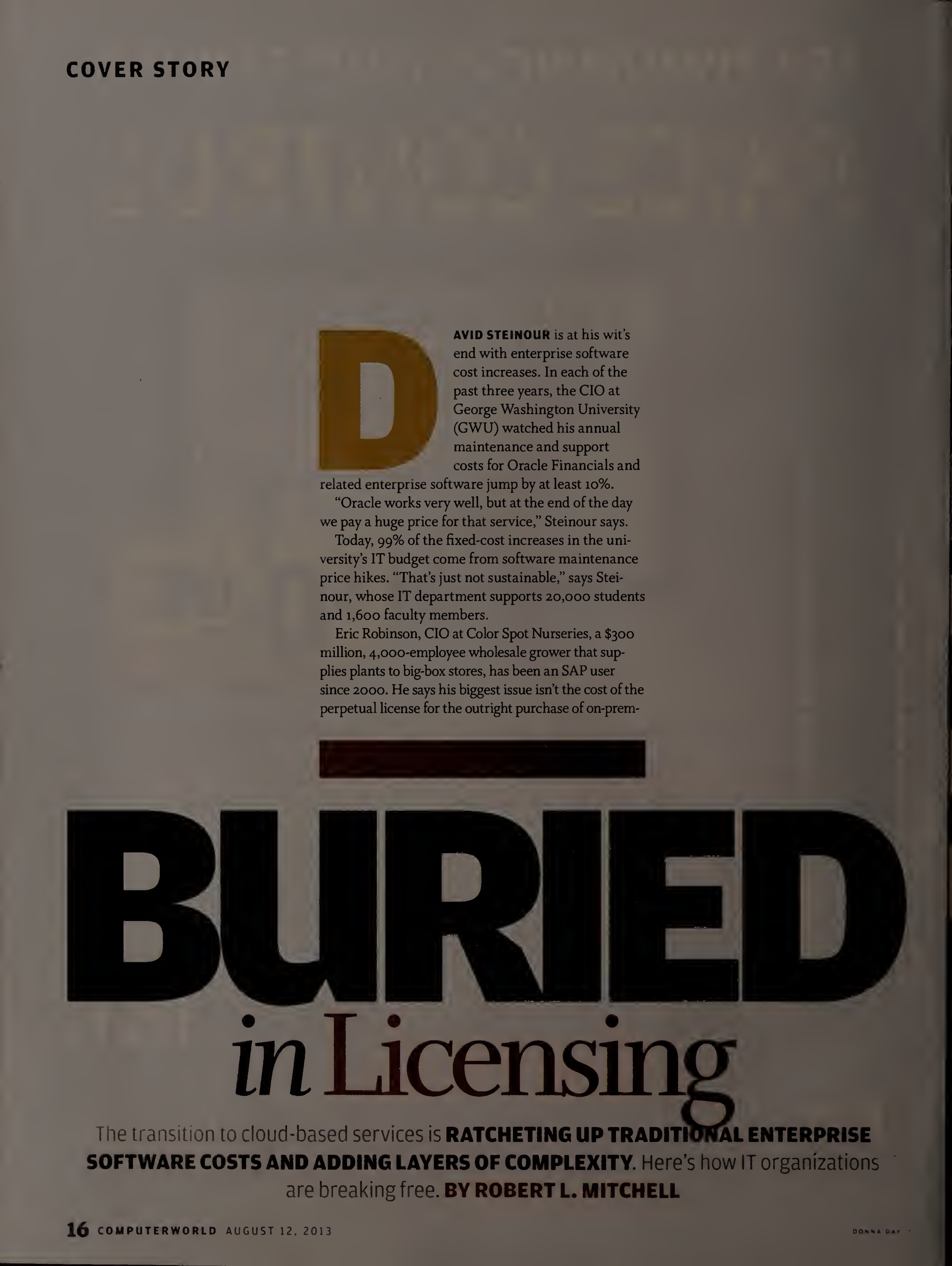

BURIED in Licensing

The transition to cloud-based services is **RATCHETING UP TRADITIONAL ENTERPRISE SOFTWARE COSTS AND ADDING LAYERS OF COMPLEXITY.** Here's how IT organizations are breaking free.

BY ROBERT L. MITCHELL

DAVID STEINOUR is at his wit's end with enterprise software cost increases. In each of the past three years, the CIO at George Washington University (GWU) watched his annual maintenance and support costs for Oracle Financials and related enterprise software jump by at least 10%.

"Oracle works very well, but at the end of the day we pay a huge price for that service," Steinour says.

Today, 99% of the fixed-cost increases in the university's IT budget come from software maintenance price hikes. "That's just not sustainable," says Steinour, whose IT department supports 20,000 students and 1,600 faculty members.

Eric Robinson, CIO at Color Spot Nurseries, a $300 million, 4,000-employee wholesale grower that supplies plants to big-box stores, has been an SAP user since 2000. He says his biggest issue isn't the cost of the perpetual license for the outright purchase of on-prem-

DONNA DAY

ises SAP software, or the annual increases in SAP maintenance fees — it's the fact that Fallbrook, Calif.-based Color Spot wasn't getting much in return for the money it spent on maintenance.

Robinson says SAP has been gradually raising support costs in annual increments from the initial 17% of the original software license price. In 2008, SAP had sent Robinson a letter announcing plans to gradually increase his rate to 22% plus an annual increase based on a cost-of-living index adjustment, and move him from Standard Support to a new Enterprise Support plan. In 2010, Color Spot was paying 18.1% and Robinson decided to drop SAP's maintenance plan and move to a third-party provider. At that time, SAP reintroduced Standard Support. In July, SAP raised the price on Standard Support from 18% of the original license cost to 19% for new contracts. Enterprise Support remains at 22%.

Rates started at 15% in the early 1980s, then gradually rose to 17% and stayed there until about 2005, says R "Ray" Wang, an analyst at Constellation Research specializing in enterprise software contract negotiations. They've since risen to 19% and now 22%, he adds.

Robinson acknowledges that Color Spot's SAP system is stable and that he didn't need to make many calls for support. But he points out that SAP doesn't support any of his company's customizations, and the support packs and major upgrades his IT organization was required to install to remain in compliance with the maintenance and support contract were expensive and delivered no value to the business.

SAP's top clients now spend $2 million to $5 million per year on maintenance and support contracts that average 20% to 25% of the original software cost, Wang says. "Every four years, they're paying the same amount they paid for the license," and most say that they're not getting the features they want for their money, he says. "They wonder whether they're better off not paying maintenance and just buying new software every four or five years."

For Robinson, the last straw came when he decided not to upgrade from Version 4.7 and SAP was about to require Color Spot to transition to its extended maintenance program, which is for users of older versions of SAP software. "At that time, SAP was 20% of the IT budget. It was ridiculous," he says. That's when he decided not to renew Color Spot's maintenance contract.

An SAP spokesman responds that, historically, standard support customers have paid an additional 2% to 6% for extended maintenance.

In general, however, "the way enterprise software is licensed today is just not meeting the needs of many organizations," says Patricia Adams, an analyst at Gartner. Organizations are fed up with the perpetual-license-plus-maintenance approach to enterprise software purchases, and they're tired of running on the upgrade treadmill simply for the sake of keeping their software maintenance status current. Organizations "struggle with the currency of the software," Adams says, "and, when negotiating, they still struggle with finding out how the vendor performed against the contract."

IT shops have been pushing back. When GWU's contract comes up for renewal, Steinour says he plans to look at more cost-effective approaches to enterprise software licensing and maintenance, including a gradual migration to a subscription-based software-as-a-service offering from Oracle or another vendor.

If the university commits to a change, it would consider moving to third-party maintenance as an interim step, he says. That would allow the IT department to continue supporting the software and receive bug fixes as well as tax and regulatory updates for payroll, but no software upgrades. Essentially, the university would freeze its two ERP implementations until it was ready to move off the old ERP system — and that process could take a long time. "[Users] would be involved in the decision process of the future direction, [and] I am sure they would be supportive of our mission," Steinour says.

David Steinour, CIO, George Washington University

For his part, Robinson says he couldn't justify spending hundreds of thousands of dollars to upgrade to SAP Enterprise Core Component (ECC) 6.0 just to keep maintenance costs down. "I looked at ECC 6, and I found nothing that made sense for us," he says. So Color Spot went with Rimini Street, a third-party maintenance provider that offered maintenance and support services for less than half of what SAP was charging — and it included support for Color Spot's customizations, something SAP didn't offer. "Our maintenance is now 9% of the IT budget; initially it was 20%," Robinson says. And while he no longer receives software upgrades, he says he can still buy additional modules and add users. The software vendors are "still happy to take your money," he says.

Third-party maintenance providers such as Rimini Street and CedarCrestone have incurred the wrath of Oracle's lawyers — and for good reason, says Frank Scavo, president of Strativa, a management consulting firm that advises enterprises on business and technology decisions: The vendors' lucrative contracts carry profit margins as high as 90%. (Oracle didn't respond to several requests to comment on its licensing policies.)

There's a reason why traditional ERP software costs are rising. Sales of core ERP systems have slowed, with projected growth of just 5.8% through 2016. And much of the new sales are of cloud-based services, which are seeing double- and even triple-digit growth, says Christine Dover, an analyst at IDC.

"These companies are under earnings pressure," Scavo says, and while traditional ERP software vendors are moving aggressively to compete, they have lost market share to SaaS providers like Workday, Salesforce.com and NetSuite. And the transition to a cloud service model, where a deal might bring $100 per user per month

> **The way enterprise software is licensed today is just not meeting the needs of many organizations.** — PATRICIA ADAMS, ANALYST, GARTNER

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The Politics of **Going Off Maintenance**

When Eric Robinson put forth the idea that Color Spot Nurseries might want to move to a third-party maintenance and support provider for its SAP ERP software, he was careful to present both the rewards and risks to management. "I do everything I can to present the advantages and disadvantages while acting indifferently to allow the business to make the decision," Robinson says.

The benefits included the following:

- Maintenance and support costs would decline by 50%.
- The third-party maintenance provider would support Color Spot's ERP customizations – something that SAP didn't do.
- There wouldn't be as much of a need for labor to test updates in order to stay on a release that SAP supported.
- It would be possible to modify the system without worrying about an SAP update overlapping with a modification.

The potential downsides included the following:

- The third-party support provider might not be able to fix a core system failure because it wouldn't have the source code.
- The provider might have difficulty recruiting IT professionals to work on stale systems.
- At some point, the older ERP system might not be compatible with new software or hardware.
- The third party might not be able to provide tax regulation updates for payroll systems.
- The move might hurt Color Spot's relationship with SAP – which could affect negotiations for additional SAP licenses.

"After discussing these in detail and determining Color Spot's strategy in what makes the company successful, the decision was pretty easy," Robinson says. Management voted unanimously to move forward. While technically this was not an IT decision but a strategic business decision, the pressure was on Robinson to deliver. "I felt I was taking all the risk, since it's my responsibility to make certain the system worked," he says. Fortunately, he adds, it did.

– ROBERT L. MITCHELL

versus several million upfront and a 22% annual maintenance fee, is a difficult one for traditional ERP vendors to make because the money comes in gradually rather than in a big lump sum.

So vendors have been pursuing ways to get more revenue from their existing customers while they make the transition. "Both SAP and Oracle are being very opportunistic in accounts where they already have a strong presence," and that's being driven from the top down, says David Blake, CEO of Boston-based management consultancy UpperEdge.

One way they're doing that is by extracting additional maintenance and support fees, Scavo says. His clients have also seen an increase in the number of on-site audits.

Yet another gotcha for SAP users in the past year or two has been the vendor's aggressive enforcement of its indirect access fees, which are additional licensing charges for users of other applications that access SAP applications or data stored in SAP systems. Scavo says the practice represents a potentially large liability for the unwary, since SAP systems are often integrated with third-party applications on the edge of core ERP systems.

The language describing indirect access charges in the general terms and conditions in SAP contracts has been "quite vague and ambiguous," Scavo says, so some enterprises customers that have purchased non-SAP systems have been exposed to unanticipated charges. "It's more of a Trojan horse approach," he says, explaining that once a user brings in third-party software, SAP comes in looking to enforce its indirect access charges.

Lynn Costa, former vice president of shared services at Scholastic Inc., a $2 billion children's book publisher, says she faced such a situation when she discovered that one of the publisher's enterprise software licenses was tied to hardware that was shared with other programs.

Such problems could be avoided by isolating the hardware in its own environment, but that may not always be possible. Costa's advice: It's not enough to have the lawyers and procurement people review these contracts. "Have multiple people on the IT staff read through all of the details," she says. "And push back. If you don't negotiate it at that time, you're never going to get it later."

Steinour says he doesn't want to get caught with last-minute surprises, so he's especially cautious when it comes to renegotiating contracts. "We start talking a year and a half before the contract is up. If it doesn't work out, I still have a year to plan my exit strategy," he says.

The problem with that negotiating strategy is that the university is locked in. Steinour knows it — and his software vendors know it. "Oracle is my biggest challenge because we don't have much leverage," he admits.

Like many IT executives, Steinour says he would like to take advantage of subscription-based cloud offerings to avoid paying a separate maintenance bill and making capital investments in major software and hardware upgrades every few years. But the university is bound to an ERP implementation that's highly adapted to the ways in which the organization likes to conduct business. "We're used to buying software and customizing it to death," Steinour says.

"When you put in a $40 [million] or $50 million ERP package, it's difficult to have an exit strategy without causing a lot of pain. They know that, and so they increase our costs every year," he says. Therefore, Steinour says he would like to lay the groundwork for a more strategic approach.

"With cloud, you need to adjust your business processes to align with the software," he says. That model will require an expensive business process redesign, and that kind of change won't come easily. "The hardest part is getting the business areas to readjust their business processes, which add overhead to whatever we do," he says. But in the long run, he adds, "we will be more sustainable going forward."

A New Era?

At Red Hat, 40% of the enterprise software runs as cloud-based services under a subscription model, but the vendor of open-source software also has a traditional implementation of core ERP applications running on premises to support its 5,600 employees, according to CIO Lee Congdon.

To Congdon, the key to moving forward is to create a viable option for moving off of those platforms. He worries not just about cost but about being locked into a vendor's software with a highly

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customized implementation that might lead to inflexibility — and competitive disadvantage. "What happens when your competitors move to new systems with different attributes?" he asks.

Congdon is worried about the potential competitive threat from startups that aren't tied to legacy on-premises ERP systems. And IDC's Dover says that's also a valid concern to have about global competitors in emerging markets. "In places like India, they didn't buy traditional on-premises systems and they're going right to cloud," she says.

Congdon says Red Hat is "creating the option to move [by] working to keep our business processes straightforward and minimize customizations."

Lee Congdon, CIO, Red Hat

But the SaaS model has its own potential pitfalls, IT executives and analysts say. "My worry is that the SaaS vendors are going to do to us exactly what the big vendors did to us," Steinour says. "We have to make sure we have a rock-solid contract and an exit strategy."

From a vendor's standpoint, moving customers to a subscription-based service should be more attractive because software maintenance costs can be rolled into a single monthly fee. For the customer, however, a move to SaaS simply means maintenance fees are hidden within monthly subscription fees.

"You can't go off maintenance with Salesforce.com," Scavo says. And while subscription-based services can get IT off the upgrade treadmill and allow it to replace multimillion-dollar capital investments in software and hardware infrastructure with subscription fees, they may not be cheaper in the long run.

Already, Scavo says, "cloud vendors are able to charge a premium because of the limited amount of competition in some markets." For example, Salesforce.com already dominates the CRM market. While today the cloud is cost-competitive, vendors such as Salesforce.com could become tomorrow's SAPs and Oracles.

As cloud usage grows more common, there will be increased competition, Scavo says. But IT should be prepared for the possibility that a few vendors may dominate some markets.

IT may not have to move to the cloud to get subscription- or usage-based pricing, but Costa says she doesn't think those models are always fully baked.

And not all enterprise software vendors have a mature software licensing model to accommodate organizations that host infrastructure in a private cloud rather than a traditional on-premises setup — "especially when you need to have flexibility to hit peaks and valleys," she says.

Users should assess the maturity and scalability of cloud-based systems before moving to subscription-based SaaS offerings. For example, even though Scholastic has embraced the SaaS model for some enterprise applications, Costa isn't sure that core financial tools would be a good fit for the cloud right now. But her view could change as the cloud matures, she adds.

With regard to maintenance, Scholastic has frozen its implementation of JD Edwards accounting software and outsourced maintenance to Rimini Street. It's investigating a move to the Oracle E-Business Suite. But because that option is so costly, Costa says, Scholastic also plans to investigate other alternatives, including SaaS-based ERP systems such as NetSuite.

Mix and Match

Traditional software vendors are also experimenting with subscription and usage-based models for on-premises products, while some cloud vendors are offering a perpetual license-plus-maintenance model for their SaaS wares. Pershing LLC, for example, has a usage-based "on demand" licensing model for the IBM enterprise applications and hardware running in its data center. The license "starts with the hardware itself. Then the software licensing depends on hardware you run on," says managing director and CIO Ramaswamy Nagappan.

At Scholastic, director of network service Arun Abraham decided to use mobile device management (MDM) software vendor AirWatch's cloud-based service — but he signed up for a two-year perpetual license plus maintenance rather than opting for a subscription. "We got a very reasonable price," he says.

As SaaS options mature, organizations should start to rethink their core ERP strategies and prepare for changes, Scavo says. For now, he thinks the best approach is what many large organizations are already doing: Retain core financial systems, but "wall them off" rather than expand them into other parts of the business. "That opens the door to considering vendors that may be more forward-looking, more agile and perhaps more cost-effective," he says.

Measuring the consumption of services is another challenge. With SaaS, Steinour says, software costs change from a per-seat charge to how many people are using the service at any given time. "But how do I monitor that in the cloud internally?" he asks.

IT also needs to invest in tools that can validate the accuracy of vendor invoices, including information such as who logged in, when and for how long, Adams says. And IT needs to be able to forecast demand to better manage licensing costs, whether in the context of a traditional software license or a subscription service.

For example, iQuate's iQAnalytics tool takes into account how current software was deployed, license details, discounts and other historical data to project future demand — and software costs. It drills down into very granular details such as what applications are deployed in which J2EE app servers, database configuration option details and Veritas cluster configurations, so that IT can model the impact of changes on software costs, says iQuate CTO and founder Jason Keogh.

All that information, Adams says, can be used to drive a better deal when it's time to renegotiate. "Most companies don't go back and negotiate the terms as well as they should. Large organizations should be able to do that," she says.

Whether you want to move to a third-party maintenance provider or not, simply making it known that you're entertaining the idea can lead to savings. "The presence of these providers is already moderating the behavior of [ERP] vendors," Scavo says.

Color Spot's Robinson says he knows that SAP looks unfavorably on his decision to move off SAP maintenance. But the decision in no way reflects dissatisfaction with the software itself, he adds. "I know SAP sees Color Spot as a rogue player, [but] nothing could be further from the truth," he says. "We love SAP, we really do. But the traditional licensing model, for the future, does not make sense." ◆

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How one company was able to quickly capitalize on consumers' changing tastes using data analytics.

BY CINDY WAXER

INSIDE THE [Yogurt Wars]

YOGURT MANUFACTURERS ARE straining for more market share — literally. Thick, strained Greek yogurt, a single-digit portion of the U.S. yogurt market in 2007, now accounts for 28% of today's $7 billion in U.S. yogurt sales. And sales are growing, while demand for non-Greek yogurt is declining.

But while slick ad campaigns and novelty products like Greek yogurt smoothies may pique the interest of consumers, not all yogurt manufacturers are banking on advertising savvy alone to help them capture more market share. For Dannon, a subsidiary of France's Groupe Danone, science is the secret weapon in the yogurt wars.

JONATHAN KANTOR

At a glance

- **ORGANIZATION:** Dannon produces and sells 6 million cups of yogurt a day in almost 100 flavors, styles and sizes.
- **PROJECT GOAL:** To increase market share in a highly competitive field and better anticipate consumers' changing tastes, Dannon rolled out IBM predictive analytics tools, including the Strategic Trade Planning and Customer Trade Planning systems.
- **TEAM LEADERS:** CIO Timothy Weaver and Jeremie Davis, Dannon's director of sales and marketing systems, are spearheading the project.
- **RESULTS:** Since it was deployed in May 2011, the predictive analytics software has helped Dannon improve its accuracy in forecasting and inventory planning from about 70% to 98%.

JONATHAN KANTOR

That wasn't always the case for the White Plains, N.Y.-based dairy behemoth. For years, Dannon's sales force relied "on a very manual, Excel spreadsheet-driven process" to forecast sales and manage inventory, says Dannon CIO Timothy Weaver.

"It was a very cumbersome process and not particularly accurate," he says. What's worse, drawn-out forecasting was leaving Dannon's sales reps with less time for the actual execution of sales plans and customer engagement. And attempts at forecasting that were only about 70% accurate were prompting production teams to side-eye sales reps' reports.

That is, until Dannon turned to IBM's predictive analytics tools, including the vendor's Strategic Trade Planning and Customer Trade Planning systems, in April 2010. Dannon won't disclose hardware and system costs, other than to note that its technology investment "returns significant business value."

Forget about gut feelings and guesswork. Nowadays, Dannon sales reps first design a promotion, such as a 49-cent reduction on the cost of a four-pack of Oikos fat-free Greek yogurt. Then they enter factors such as pricing conditions, target customers, length of the promotion and product SKUs into a computational model.

Timothy Weaver, CIO, Dannon

Using sophisticated algorithms, the model crunches the figures, along with historical, regional and market data, and spits out "the expected base sales you will always see from that pack group, the incremental sales you can expect from that particular promotion, and its financial implications — such as gross revenue increase and profitability," Weaver says. Dannon became a user of IBM's tools through a series of acquisitions: Its original predictive analytics software was from M-Factor, which was acquired by DemandTec, which in turn was acquired by IBM.

Since rolling out IBM's predictive analytics system in May 2011, Dannon has increased its accuracy in forecasting and inventory planning from about 70% to 98%. But predictive analytics is about more than simply arming sales representatives with a crystal ball. While data analysis has helped Dannon retain market share in the hypercompetitive yogurt industry, the company has found that success comes at a price. Like many data crunchers, Dannon is discovering that for predictive analytics to pay off, it's necessary to devote some time and resources to making the system work. Careful testing of models, senior-level buy-in, occasional IT hand-holding and a refreshing of talent are key requirements.

A Dog-Eat-Dog Market

In order to fully appreciate the power of predictive analytics, it's important to understand just how cutthroat the Greek yogurt industry really is. Capacity constraints, retailer squabbles, poor pricing strategies, misguided promotions and missed sales quotas are serious stumbling blocks that can lead to lost market share for Dannon and competitors like Chobani, General Mills and Liberte.

However, by better anticipating product availability and customer behavior, manufacturers like Dannon are improving sales and squeezing out profits. In fact, while Chobani dominates the Greek yogurt landscape with 53% of the market, Dannon Oikos jumped from a 2.8% share of the market to nearly 13% in 2012, according to a March 2013 report from market research firm Packaged Facts.

"More and more consumer packaged goods manufacturers are using predictive analytics to ensure that the right products are in the right stores for the right shopper," says John Karolefski, executive director of the Shopper Technology Institute, a Cleveland-based trade organization specializing in technologies that engage shoppers and analyze their behavior. "That's the holy grail for manufacturers — to better forecast demand, help retailers prevent out-of-stock items and develop more effective promotions."

One way that Dannon is using analytics to better predict consumer demand is by closely examining its regional sales figures. For years, the company priced its products consistently across the U.S. However, slicing and dicing its sales data revealed greater price sensitivities based on geography. "Reducing price by 10 cents has a very different impact in the central part of the country compared to the East Coast and West Coast," says Jeremie Davis, Dannon's director of sales and marketing systems. "What we found is that it's OK to have a different pricing strategy for different regions, even for a product that's relatively as inexpensive as yogurt."

Gaining greater insight into how price affects consumption is a significant advantage for Dannon. Many yogurt manufacturers, such as General Mills, have attempted to increase their share of the Greek yogurt market by luring customers with heavy discounts and splashy promotions.

Product discounts can definitely drive sales. But an in-depth understanding of how pricing impacts consumer behavior yields a far more sophisticated strategy than simply undercutting competitors on price.

> **That's the holy grail for manufacturers – to better forecast demand, help retailers prevent out-of-stock items and develop more effective promotions.**
>
> **JOHN KAROLEFSKI,** EXECUTIVE DIRECTOR, THE SHOPPER TECHNOLOGY INSTITUTE

"There's such price pressure and high competition that there's not much price elasticity [in the Greek yogurt market]," says Gerhard Pilcher, vice president and senior scientist at Elder Research, a predictive analytics consulting company in Charlottesville, Va. "So if you don't understand your customers, you're going to fall to the wayside pretty quickly."

Gauging the impact of price on sales has also spurred modifications in Dannon's inventory planning. By comparing an item's typical sales levels to forecasted sales based on a particular promotion, Dannon can predict not only an uptick in sales, but how much more inventory is required to satisfy the increased demand. Dannon then shares this data with its demand planning organization so that production and inventory levels can be adjusted accordingly.

An Insatiable Demand

As it is, Greek yogurt manufacturers, many of them in the throes of triple-digit growth, are struggling to keep pace with explosive demand for a product that represented a mere 1% of the market less than five years ago. For example, Chobani recently unveiled plans to open a new $450 million, 1 million-square-foot plant in Twin Falls, Idaho, to increase its operational capacity.

"One of the challenges with Greek yogurt is that many manufacturers are still highly capacity-constrained and cannot meet demand," Weaver says. "That's why predictive analytics is a critical tool for us."

At the same time, yogurt manufacturers need to be careful not to over-replenish retailers' shelves with popular products. "Anything in the dairy case has a very short shelf life, so predicting volume metrics is really important," says Alison Chaltas, vice president of shopper and retail strategy at research firm GfK. "It's very different from paper towels or laundry detergent, where you have a lot of flexibility in your supply chain. The shorter your shelf life, the more important it is to get it right."

Striking the right balance also requires examining how increased demand for one product line can lead to reduced demand for another. For this reason, Dannon compares numbers on a wide variety of yogurt types using predictive analytics. For example, when the company noticed an uptick in sales of its Light & Fit Greek yogurt brand, it also explored how this increased demand was affecting the sales of its other Greek yogurt products, as well as those of its competitors. Through careful data analysis, Dannon discovered that while the popularity of Light & Fit was leading to cannibalization, with some customers switching from other Dannon brands, it was also eating into the Greek yogurt sales of its competitors and thus yielding greater overall profitability.

Another upside of Dannon's deep data dives: It's easier to set realistic expectations for sales reps, retailers and others. Whereas predictive analytics can forecast sales, it can't account for the relationship between a sales representative and a retailer. "What we expect from a salesperson and what they're able to deliver are quite often two different things," Davis says. "With predictive analytics, the tool may forecast demand for a particular product in four different flavors. But a sales rep may know that with Kroger, they'll only get four flavors on the shelf." By setting goals ahead of time, sales representatives have the opportunity to reset expectations and prevent post-promotion finger-pointing for missed targets.

Tweaking the Model

Nevertheless, for all its perks, predictive analytics can present challenges. For one thing, models infused with historical, regional and market data can grow stale and begin to churn out inaccurate forecasts. "We thought that we'd have to test and validate our models twice a year," Davis says. "But because of the dynamic nature of the category of yogurt, we've found that we need to test more often, on a quarterly basis."

One approach Dannon has found effective is taking smaller sets of data from individual models, such as actual sales of honey-flavored Oikos yogurt in April, and running those numbers through a model to see if sales and inventory forecasts match up with what actually occurred. From there, Dannon makes adjustments to its models for greater accuracy.

"A model is not something you just put in place and forget about," Pilcher warns. "It's not a manufacturing tool; it's much more of a living, breathing thing that you need to re-evaluate over time."

For example, Pilcher says that consumer trends, such as demand for probiotics or tube packaging, can skew a model's results, making fads appear as if they're long-term profit-yielding changes in consumer preferences. As a result, he says, "There's no substitute for having business experts continuously evaluate a model to see if what's being predicted actually matches the business world."

Yet amid all of the bits and bytes, there's a distinctly human element that can make or break a predictive analytics system. "Change management is one of the biggest keys," Davis says. "Our executive sponsors understood the value that predictive analytics would create, but they also understood that when salespeople have been doing something the same way for 15 years, you can't make a switch overnight."

Encouraging higher-ups to have patience, rolling out predictive analytics systems gradually, and taking time to train the salesforce can help ease the transition, Davis says. In fact, Dannon kept an active change management program in place for six months after deploying the system to monitor adoption rates. But a more personal touch, such as emphasizing how salespeople stand to benefit directly from predictive analytics, can also expedite adoption.

For example, Davis says he made a point of evangelizing to sales teams how "analytics presents a better world for them because they don't have to spend hours each week figuring out what their planned volume needs to be." And employees who demonstrated strong adoption became part of a "power-user community" that assisted in training other workers on the tool.

Deploying predictive analytics tools can also require companies to rebuild their sales teams with the right combination of sales smarts and statistical know-how. "You don't need your salespeople to have degrees in mathematics, but they do have to have an appreciation for the analytics world," Davis says.

Put Into Practice

Of course, installing a sweeping analytics system — no matter how critical to a company's bottom line — can represent an enormous burden to an already overtaxed IT department. After all, integrating data from disparate silos, securing data and ensuring data quality are all labor- and time-intensive IT activities. "Big data scares IT departments a little bit because of the amount of data and keeping it secure," Pilcher warns.

To avoid turf wars between marketing and IT, Pilcher recommends that "the IT shop view the marketing department as a client that they need to support in order to get the job done. When it's the opposite way, IT might restrict analytics activity based on parameters like disk space without a true understanding of what that disk space can provide in marketing revenue and that it'll probably pay for itself in the end."

And Dannon has discovered that holding monthly cross-functional meetings to review results and highlight business trends is an excellent way to create an ongoing conversation around predictive analytics, as well as encourage employees to air concerns.

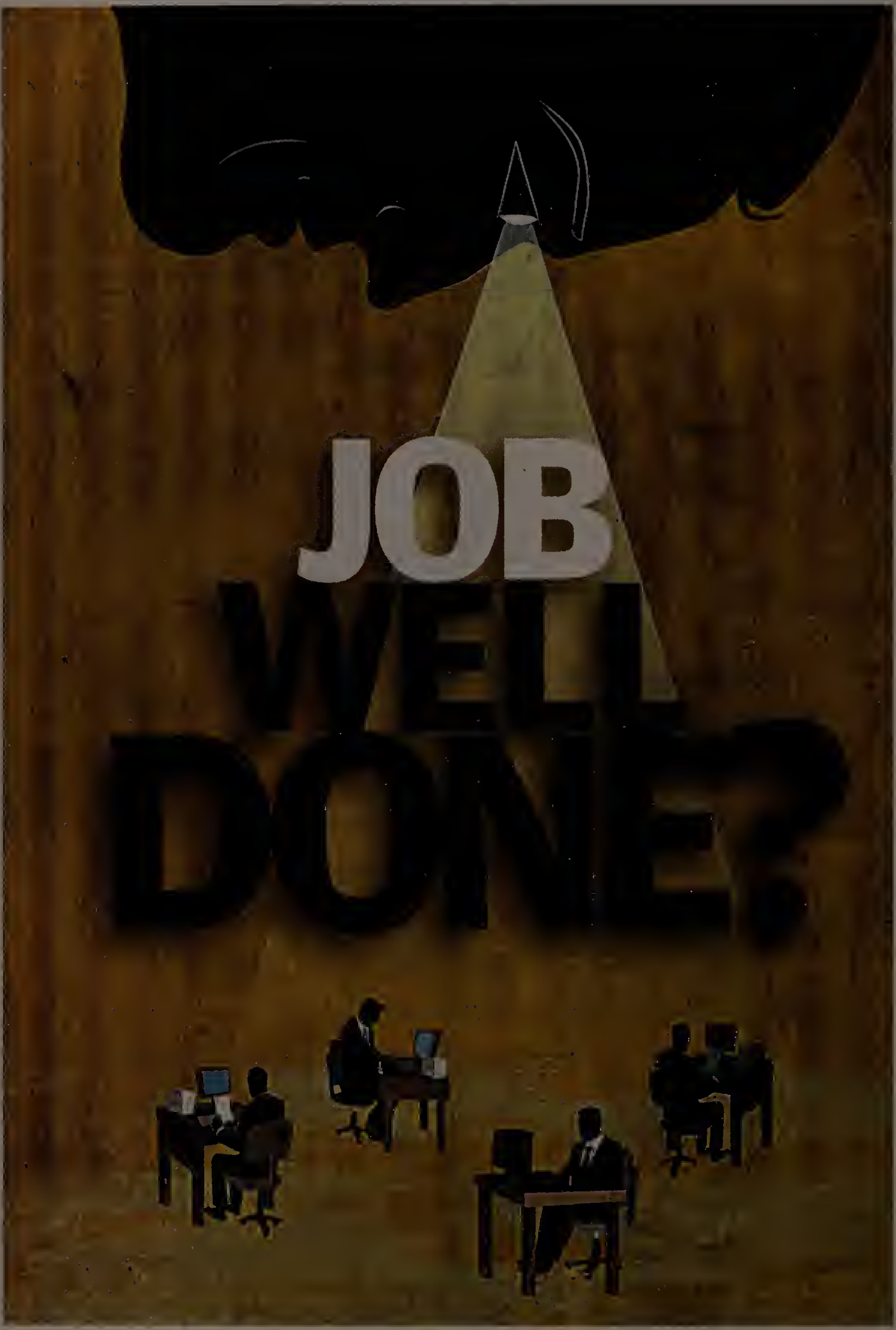
"You don't need your salespeople to have degrees in mathematics, but they do have to have an appreciation for the analytics world.

JEREMIE DAVIS, DIRECTOR OF SALES AND MARKETING SYSTEMS, DANNON

Squabbles aside, the demand for Greek yogurt continues to grow. According to investment research firm UBS, Greek yogurt sales are on course to increase to $3 billion in five years, from a current level of about $1 billion. And Bernstein Research reports that Greek yogurt sales could eventually peak at more than 50% of the overall U.S. yogurt market.

If that's the case, predictive analytics is likely to gain even more traction as a powerful weapon in the yogurt wars. After all, "you can't ignore the wealth of big data available today," says Karolefski of the Shopper Technology Institute. "And whenever you have a lot of big data available, companies are eventually going to find a way to pick and shovel their way through it, and use the results for a competitive advantage." Spoonful by protein-packed spoonful. ◆

Waxer *is a Toronto-based freelance journalist. She has written articles for various publications and news sites, including* The Economist, MIT Technology Review *and CNNMoney.com.*



JOB WELL DONE?

As IT responsibilities evolve, managers strive for better ways to measure techies' contributions. **BY MARY K. PRATT**

HOW MANY LINES OF CODE did you write this quarter? By how many hours (or days or weeks) were you behind in delivering your latest project? Was it over or under budget, and if so, by how much? How quickly were you able to get your last program to testing?

For many years, those were the metrics by which IT employees were judged when their performance reviews rolled around.

These days, IT managers acknowledge that writing fewer lines of code can be more efficient, that longer timelines and bigger budgets can be acceptable if that means getting a project done right the first time, and that moving a program to testing quickly isn't necessarily a sign of a job well done.

What's more, as IT shifts from being a service provider to a strategic business partner, managers are looking for people with different skills than IT workers were expected to have in the past.

"What we value is high performance of our services and strong execution on our projects," says Joel Jacobs, vice president and CIO at The Mitre Corp., a not-for-profit science and engineering organization.

Jacobs is clear about his expectations, and, like other IT leaders, he wants to make sure his IT staffers are meeting those objectives. But what's the best way to determine if that's the case? Gone are the days when technologists were measured on straightforward, quantifiable metrics that reflected a heads-down development focus. But what should replace those metrics?

"We have to decide what we measure, and that's true in any part of the organization, not just IT," Jacobs says.

Mitre is overhauling the way it evaluates its employees, including those in IT. The organization now evaluates the impact of what people produce alongside more traditional measures such as meeting deadlines and staying under budget. "What we're trying to measure is performance against our plans for existing services and new capabilities," Jacobs explains.

Wanted: Better IT Assessment

Throughout IT, managers like Jacobs are wrestling with the question of how to best evaluate tech workers in the face of evolving responsibilities.

Consider the findings of an October 2012 survey of 3,500 IT professionals and leaders by TEKsystems, an IT staffing and consulting firm: Only about half of the respondents in either group said that their supervisors are great at performance management.

Performance management "is definitely challenging, and that's why you see it not happening," says TEKsystems marketing director Rachel Russell.

But any organization that wants to maximize the value of its

THINKSTOCK

workers will want to make sure assessments do, indeed, get done, Russell says. Performance management, of which evaluation is an important part, is "basically how an organization leverages people to achieve what it's trying to achieve," she says.

"If you have a set of goals and if you only ever talk about them formally once a year, as many companies do, you're not going to be set up for success," Russell explains. "The more you talk about them, the more ingrained they are with your staff and managers, and the more likely you are to achieve those goals."

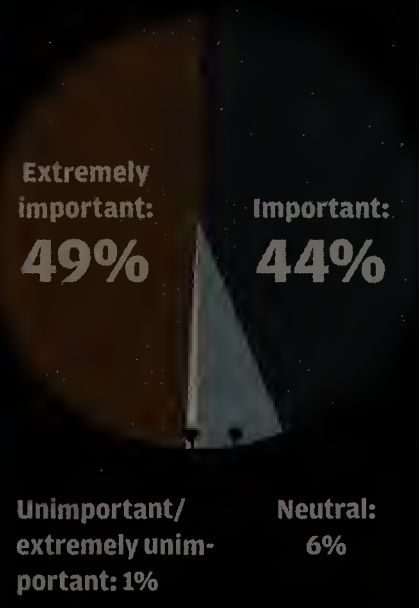
In the TEKsystems survey, 83% of the IT professionals polled said that formal feedback is either extremely important or important to their success. About half of them said they receive formal feedback once or twice a year, and 37% of them reported that they get formal feedback on at least a quarterly basis.

Respondents value informal feedback even more: 93% of the IT professionals said that regular, high-quality informal feedback is important to their success.

Yet, only 14% of the IT professionals and just 12% of the IT leaders said that informal feedback is given when performance deviates from expectations. Moreover, 15% of the IT professionals and 8% of the IT leaders said that informal feedback isn't given at all.

IMPORTANCE OF **INFORMAL FEEDBACK**

How important is regular, high-quality, informal feedback to your success in your role?



SOURCE: TEKSYSTEMS SURVEY OF 3,500 NORTH AMERICAN IT PROFESSIONALS, OCTOBER 2012

Assessing Value to the Business

The employee evaluation process should start with clearly defined goals and an understanding how each IT worker helps reach those goals, says Dan Roberts, president of Ouellette & Associates Consulting. Those goals should shape the metrics that are used to evaluate technologists, he says.

"The skill sets and competencies are changing, so we have to assess people in new ways, provide new frameworks, to see where they are with these new competencies," Roberts says. "More and more, they're being measured around relationships [and] how they're perceived by the business."

One of Roberts' clients, the IT department in a large pharmaceutical company, has a report card that takes into account business-unit satisfaction levels — a metric is then used to assess how well IT teams are delivering on stated goals. "The metrics are changing from the heads-down technology metrics," he says. "Now it's on business results and the business value they're bringing to the organization."

Stephen Olive, CIO at Philips Healthcare, says his 500-member IT department sees itself as a strategic partner, so he's judging success on what IT is doing for the business and what value it delivers.

While Olive still considers budgets and schedules when thinking about employee performance, determining whether IT workers meet those standards now plays a smaller role in the way he evaluates people. Like other managers, he now looks for and measures more esoteric qualities, such as teamwork and cooperative behavior, as well as the employee's understanding of business goals and how to go about achieving them.

Olive points to his company's rollout of Salesforce.com, which recently went live to 750 users. The success of that IT project is being measured by managers' and users' testimonials on whether the application helps them do their jobs better or more efficiently. "You share that with your IT employees, so they know we're making an impact on the business," he says.

While Philips Healthcare does have a formal performance development process — which includes an annual goal-setting session and a formal midyear review where managers meet with their workers and provide written feedback — the company's ongoing, informal performance-review mechanisms are more likely to capture the business value Olive is after.

Managers gather feedback on their employees from "assessors" — key people surrounding individual IT workers. With that feedback, managers can better evaluate an employee's strengths and weaknesses, says Jean Scire, senior director of information systems at Philips, who reports to Olive.

The ongoing, informal evaluation process allows managers to identify staffers who aren't performing up to snuff, and either offer them coaching or move them into positions that better fit their strengths. It also allows management to recognize outstanding work through both feedback and formal recognition programs — both of which are great for morale, Olive says.

Above all, the process ensures that IT as a department is serving the business. "With this business alignment, how you evaluate [performance] is really about what you're doing for the business and what value do you add," he says.

Walking the Walk

CIOs and IT management consultants stress that this evolving approach to performance monitoring and evaluation requires a lot from managers. They must interact with employees and their business unit colleagues often enough and openly enough to hear and see when systems are making the desired improvements, when collaborations are happening as they should, and when projects are progressing as intended — and when they're not.

That means taking the time to talk to people about a job well done, soliciting nominations for formal recognition programs, or working one-on-one with an employee who's missing milestones, Scire says. "You have to know your employees well enough to have those open communications," she observes.

Jacobs agrees. At Mitre, "we've been increasingly pushing our [managers] toward 'meaningful conversations' rather than compliance to a checklist," he says. "But even though it's a conversation, it's not just chitchat. There's a method to it — a method that aligns to what our company is trying to achieve." ◆

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. You can contact her at marykpratt@verizon.net.*

Security Manager's Journal

MATHIAS THURMAN

Learning to Let Go and Offshore

It was impossible to resist the pressure to send some IT security activities offshore. So far, it's working out well.

Trouble Ticket

» Some IT security activities have to be sent offshore.

» For each activity, specify the responsibilities of the offshore and corporate teams.

I **HAVE SHUNNED OFFSHORING** and have written about my concerns in the past. But I worked for a different company when I shared those thoughts, and years have passed since that time. When my current employer started sending some IT activities to an office in India, I was more satisfied than I was in the past that security was being well addressed. For starters, our network and server operations team has moved monitoring offshore. That led to the offshoring of several other activities, including the administration of our network and of the Windows and Unix systems, as well as the help desk and quality assurance operations.

No security-related activities were sent overseas, though. I always wanted to keep security tightly under my control. But it's impossible to ignore the savings that offshoring makes possible, so after talking with peers at other companies, I learned to let go of some of that direct control.

These days, my team is running a number of technologies that are extremely intensive from an operational standpoint, including security incident and event management (SIEM), data leak prevention (DLP) and file encryption. I could keep two to four full-time analysts busy caring for those technologies and responding to incidents, but we just aren't going to be handed the budget to do that in the U.S. So I am now offshoring several security activities, and thus far, none of my fears has been justified.

For every activity that I let our offshore partners handle, I specify their responsibilities versus ours at corporate. I then list the tools and applications to be used and define metrics for measuring performance.

the discussions about security! **computerworld.com/blogs/security**

The weekly security scans of our applications and infrastructure are quite time-consuming, so they were a great candidate for offshoring. In this case, the corporate security team is responsible for identifying the tools to be used, establishing a scanning policy and schedule, and specifying the assets to be scanned. The offshore team is responsible for coordinating the scanning, filing change controls if necessary, running and monitoring the scans, validating results, creating reports and managing the remediation activity to completion. They report back to me the status of scan activity, tell us the mean time to remediate issues and identify anything that puts the organization at risk.

Collecting metrics can also be done well overseas. We regularly do this in a process that can be painfully slow, simply because of the number of metrics we produce. For example, we collect URL filtering stats from our firewalls, incidents from our incident response reporting tool, patch and antivirus compliance updates from our systems management tools, and time allocation data from our project management tool. Now, we at corporate simply define the metrics to be collected, and the offshore team actually collects the data and prepares pivot charts and other graphs. As a bonus, the offshore team has automated what it could, giving us a nice dashboard with metrics updated in almost real time.

Next up will be a more complex activity: SIEM administration. This will require some deeper skills; we will need a couple of people who can write scripts, do malware analysis, solve problems, and handle networking and system administration. I've interviewed over a dozen candidates so far, none of them qualified.

Once that is squared away, though, I plan to offshore audit/compliance, incident response, initial response to customer questionnaires, document preparation, response to certain security-related help desk tickets and DLP administration. Within a year, I expect to have doubled the size of our offshore team.

I'm a convert. Even though time-zone differences require meetings at odd hours, the benefits far outweigh the inconveniences. ◆

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

> **I have shunned offshoring. I always wanted to keep security tightly under my control.**

Discussion Underway

(want in?)

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OPINION

PAUL GLEN

Nobody Wants You to Be A Tech Vending Machine

“EVERYONE” KNOWS that to earn the trust of a new client or your boss, you need to provide a quick-win deliverable. The assumption is that fast response to a request demonstrates your competence and earns trust.

> Providing a quick-win deliverable is of value only if it's what's really required.

But we geeks get a bit carried away with this rule. It's our way, after all, to embrace rules while ignoring the complexity of real relationships.

In my experience, the quick-win theory leads to disaster as often as success. This is because the theory is built on two assumptions, one true, the other only half true at best.

Assumption No. 1: Clients/bosses remain uncertain, skeptical and even insecure about new hires, concerned that they made a mistake. This is completely true. Not unreasonably, they feel exposed for hiring you. You might fail to deliver on their goals, or make them look bad.

Assumption No. 2: Delivering quickly on the requests of clients/bosses is a sure way to alleviate their concerns. This is not nearly as true as we would like to believe.

Why?

The quick deliverable is often not what is really required, even if it is what was asked for. Delivering the wrong thing doesn't imbue your new boss with confidence, no matter how quickly you do it. All it does is tell him that you fulfill requests unthinkingly and are uninterested in or incapable of the higher-order work of figuring out what needs to be done. You can seem like a technology vending machine.

Bosses and clients need to feel that they can comfortably rely on you — that you *can* deliver for them, and that you *will* deliver for them. Those aren't the same things.

You convince them that you *can* deliver by demonstrating that you are competent. But there is a trick to demonstrating competence to bosses and clients who don't understand the technical details of what you do and can't really discern the quality of your deliverables. Unable to properly evaluate your technical skills, they will instead seek obvious signs of professionalism and judge you based on factors like these:

- Whether you followed through on your commitments.
- Whether you took responsibility when you didn't follow through.
- Whether you communicated in language they could understand.
- Whether you kept them informed about progress and obstacles.
- Whether you were condescending or difficult.

You convince them that you *will* deliver for them by showing that you really want to help them. Your competence won't matter to them unless they believe that you are internally driven to apply that competence for their benefit. In contrast, the primary desire that a quick deliverable reveals is the desire to earn trust, and that isn't the same as the desire to be helpful.

Early on, bosses and clients need to hear what you are genuinely committed and determined to do for them. This is not a promise, but a sense of what's important to you. You don't need to lie and give a guarantee of a delivery date. You just need to let them know that you feel “committed to meeting the date” — that you care.

To earn the trust of a new boss or client, you need to create an experience that builds trust, not just a deliverable that you hope will substitute for that human connection. ◆

Paul Glen, CEO of Leading Geeks, is devoted to clarifying the murky world of human emotion for people who gravitate toward concrete thinking. His newest book is *8 Steps to Restoring Client Trust: A Professional's Guide to Managing Client Conflict*. You can contact him at info@leadinggeeks.com.

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Career Watch

Jennifer Allen and Judy Novak.

Judy Novak & Jennifer Allen

A vice president of finance and a program manager at Xerox **talk about mentoring,** *from both sides.*

How did you benefit from participating in Xerox's mentoring program? JN: As a mentor, I benefit in many ways. First, it keeps me connected to a community of people that I might not otherwise be engaged with. In order to do my job at Xerox, I need to understand customer requirements and employee perspective. Mentoring allows me to understand challenges that our employees encounter in the business, whether in my immediate work area or elsewhere. Second, mentoring gives me visibility into a broad network of individuals. Xerox's level of success is totally dependent upon the quality of its employees. Senior managers have a responsibility to develop employees to become future leaders of this company, and mentoring is an avenue to do that. Last, I enjoy mentoring. It's very rewarding to feel that you've helped others move their careers along or increase their satisfaction in their current role.

JA: The benefits are far-reaching. The program has connected me to resources that are outside of my immediate organization and area of expertise. It has offered me a safe place to explore various career options in a very big, diverse global corporation and develop concrete goals toward attaining them. It has also helped me partner for continuous improvement. I can reveal my insecurities without fear of judgment, learn more about myself and my strengths, receive coaching on how best to maneuver challenging situations, and then concentrate on areas for further development.

What are the relative benefits of formal and informal mentoring relationships? JN: I currently mentor several people, two formally and many others informally. Both approaches are good for different reasons. With a formal relationship, you tend to meet on a regular basis and have topics that you discuss at each meeting, as you work an agenda over a set time period. With informal relationships, the mentoring tends to be more on an as-needed basis. I have informal mentoring with several people who have worked for me in the past. Our conversations are typically very focused, such as when they are looking at making a job change.

JA: While our mentor match is formal, we collaboratively set the tone and expectations for our sessions. The goals are primarily driven by the overall objectives that I have. My mentor counsels and holds me accountable to follow through. This works for us. It balances our leadership styles and gives us the opportunity to be flexible and shift gears if needed.

Was gender a consideration when you chose your mentor/mentee? JN: Gender is not a consideration when choosing a mentee. That being said, I have more female mentees than male, and over the years many more women have approached me regarding being a mentor than have men.

JA: Gender was not an attribute that I considered, but having a female mentor is a plus. It adds a dimension of unspoken understanding, and has allowed us to quickly bond on some non-work-related topics. Judy understands my work/life balance concerns, and I have benefited from our shared experience as parents.

GETTING AWAY FROM IT ALL?

It's summer vacation season. How free are you to get away? If you're like the 200 IT professionals polled by TEKsystems in May, the answer might be "not very." No less than 67% of the senior IT professionals responding to the IT staffing firm's survey said that they're expected to be available during vacation, and 44% of the senior-level respondents said they're expected to be available 24/7 while they're away. (See related story, page 6.)

Things are better lower on the career ladder: Just 29% of midlevel and entry-level IT pros said that they're expected to be available during vacation.

67% Percentage of IT workers at all levels who say their vacations have been interrupted by work demands at some point in their careers.

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Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Keeshia Moultrie. Please reference job # below:

Technical Solutions Consultant (NY, NY) **#1615.5498** Provide technical and product services for Google. Exp incl: internet products & technologies; XML, HTML, & Jscript; & C, C++, &/or Java.

Enterprise Program Manager (NY, NY) **#1615.1126** Promote and support Google enterprise products. Exp incl: Java program; script in Python or Bash; CA SiteMinder, Tivoli Access Manager, or SunAccess Manager security syst; encryption & security protocols; web application dvlpmnt, high availability design, & web security implement; Lotus Notes application dvlpmnt; SharePoint, Documentum, Livelink, or IBM content mgmnt syst; proj mgmnnt; lead global technology solutions implement; & mgmnt of strategic business partners. Trvl req'd

Software Engineer Positions (NY, NY) Design, develop, modify, and/or test software needed for various Google projects. Exp incl:

#1615.3005 conduct lifecycle of prod f/requirements to user adoption, incl requirements gathering, creating designs, & implement; OOL; algorithms & data struct; bldng large scale distrib syst f/ stati data analysis; & local search or map syst.

#1615.530 C++ or Java on Linux; OOD & dvlpmnt; distrib syst design & dvlpmnt; website dvlpmnt flow; HTML, CSS, Jscript, & Ajax; & database & storage technologies.

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Software Engineer Position (Venice, CA) **#1615.1156** Design, develop, modify, and/or test software needed for various Google projects. Exp incl: write codes for web-based applications; build pltfrms, syst & ntwrkng infrastruct; & Unix &/or Linux.

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Site Reliability Engineer (NY, NY) **#1615.5586** Provide technical support necessary to ensure full availability of Google technology. Exp incl: Mac OS X & Unix; ntwrkng, puppet, & troubleshoot techniques; script in Bash & Python; GNU Makefiles; unit test; pltfrm hardening & application security; obj-C dvlpmnt; & tech. support of Mac OS X for a fleet.

Technical Solutions Consultant (NY, NY) **#1615.5241** Integrate Google products with customer technologies. Exp incl: Client interaction, incl. collect requirements, provide tech-driven solutions, & provide training; collaborate w/ large-scale cross-funct teams; optimization of client revenues via intro of new strategies & solutions; program lang, incl. C, C++, Java, DotNet & SQL; OOP; data analysis & generation of reports covering multiple bus functional modules, using querying lang; relational databases & data wrhses; web technologies, incl. XML, HTML, Jscript, CSS, & Unix; & troubleshoot revenue-impacting issues.

Software Engineer Positions (NY, NY) Design, develop, modify, and/or test software needed for various Google projects. Exp incl:

#1615.2860 sw proj dvlpmnt using C++ or Java; sw design patterns; design of database sys for large data sets, distrib syst architecture; & perf analysis of distrib syst.

#1615.3360 C & C++; Java; JVM; data struct, algorithms & software design; Python, Javascript, or AJAX; ntwrk prog or dvlpmnt & design large sw syst; sw frmwrks; databases; & version control syst.

#1615.1703 C++; code & design of high-perf distrib computing; multi-thread; algorithms; mach learn; stats & discrete math; combinatorial optimization; numerical analysis; & adv algorithm design.

#1615.5960 C++ dvlpmnt; Jscript; web dvlpmnt; web standards; open-source proj; & web rendering engines.

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Software Engineer Positions (Cambridge, MA): Design, develop, modify, and/or test software needed for various Google projects. Exp incl:

#1615.1888 C++; large scale data mine; large scale parallel & distrib computing; adv data struct; adv algorithms; & mach learn & info retrieval techniques.

#1615.2400; dvlpmnt of OO sw in C++ & Java; applications using multiple types of databases; large scale distrib syst; sw inv parallel computation; web applications; & dvlpment of feature or prod.

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Site Reliability Engineer Positions (Mountain View, CA) Provide technical support necessary to ensure full availability of Google online services. Exp incl:

#1615.1232 admin of serving or host syst; design & implement of backend tools; algorithms; test automation; dplymnt automation; & svc configuration.

#1615.2268; C++ , Java , or Python; large scale distrib sys; & end-to-end monitoring.

Network Test Engineer (Mountain View, CA); **#1615.5800** Design, develop, and execute test plans for networking features. Exp incl: support, implement, & design ntwrks; Unix &/or Linux; C, C++, Perl, Python, or TCL; TCP/IP, Ethernet, & IPv6; & L2 & L3 protocols.

Business Systems Integrator (Mountain View, CA) **#1615.5537** Design analytical solutions that provide data to answer complex business decisions. Exp incl: finance acct or supply chain systs; relational databases; full IT dvlpmnt lifecycle; & cross-funct, cross-team IT syst implement proj.

SW Eng Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.4526 systems sw dvlpmnt; C++; GCC or LLVM open-source compiler; & implementation of open-source dynamic lang.

#1615.4249 C, C++, &/or Java; AJAX, HTML & CSS; & web appl dvlpmnt.

#1615.3896 (i) Obj-C &/or (ii) C, C++, & Java; design patterns; design of sw appl; OOD & dvlpmnt; internet protocols; multithread; Hashing; bldg UI based appls; & algorithms & data struct.

#1615.5079 mach learn (AI); data mine or pattern recognition; C++; OOD; & comp algorithms.

#1615.2882 C; C++; Java; database design; SQL; HTML, HTML5, or CSS; dvlp. & test various pltfrms, incl UNIX or Linux; & data struct., algorithms, sw design, distrib computing, & stats.

#1615.6190 C++ & Python prog. langs.; OOD; algorithm & data struct design; distrib systems; & JScript, HTML, & CSS.

#1615.6264 Java; JScript; Closure Tools; HTML; CSS; AJAX; UI design & implement; design patterns; multi-thread prog; distrib syst; large scale sparse databases; MapReduce; infrastruct & frmwrks test w/ WebDriver & JUnit; & design of large scale systs.

#1615.3220 dvlpmnt of sw infrastruct to process large scale data; mach learn on search & ads domain; appl-oriented research; Java & C++; dvlpmnt of standalone appl & scalable svcs following svc oriented architecture; coordination of med to large scale sw proj; & dvlpmnt of graphical UI using technologies.

#1615.2340; write & dplymnt of web search algorithms; large-scale data process; mach learn; logs analysis; data mining & stats; high-perf web-srvr dvlpmnt; C++; & Python.

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Software Engineer Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.5046; develop, test, and enhance prod & syst utilities; design, implement, test, & maintain subsyst; MapReduce; protocol buffers; C++ & Python; & Linux.

#1615.4889; srvr side code for web-based applications; distrib syst; OS & kernel; large scale storage syst; Unix or Linux; C++ or Java; Python, Jscript or AJAX; SQL; & TCP/IP.

#1615.6186; HTML, CSS, & Jscript; web-based frontend application logic; distrib syst; highly scalable infrastruct; & UI design & implement.

#1615.7027; Unix or Linux; Python; C & C++; Perl; Shell or PHP; & tech troubleshoot & perf tuning.

#1615.3549; C or C++; dvlpmnt of sw applications; script lang; Linux program; standard ntwrk protocols.

#1615.6299; C or C++; multithread; Java & Python; large-scale data index; algorithms; mach learn; distrib syst design & implement; & parallel & distrib computing.

#1615.2824; C++; Java; OOP; algorithms; data struct; large syst sw design & dvlpmnt; & Linux or Unix; front-end dvlpmnt, incl Jscript, HTML 5, & CSS; comp pltfrms, incl Windows & Mac OS X; browsers, incl Chrome, Firefox, Safari, & Internet Explorer; & technical architecture.

#1615.2178; data struct, algorithms, & sw design; natural lang process; C++ & Python; large-scale distrib syst; & OOP.

#1615.2393; Java or C++; data storage syst; sw design & architecture; bldng scalable highly available distrib syst; & protocols for syst-to-syst communication.

#1615.5622; C++; Java & Jscript; HTML; AJAX; FSM; distrib syst; & Mapreduce.

#1615.837; srvr side technologies; web standards & protocols, incl Jscript, HTML, CSS & AJAX; MVC frmwrks; UI design; large-scale highly distrib web application infrastruct; data aggregation & analysis using MapReduce, Hadoop, Bigtable, or HBase; infrastruct & frmwrks test w/WebDriver, JUnit, HttpUnit, Jasmine, & JSTestDriver; & design of large-scale syst.

#1615.519; data struct; algorithms; sw design; C++, Java, HTML, CSS & Jscript; OOD; design & deployment of interactions between client side Jscript & large scale distrib syst; optimize client side perf on mobile pltfrms; UNIX or Linux; MapReduce Hadoop; & large-scale data analysis & info retrieval for perf tuning in various proj.

#1615.6346; Jscript, HTML & CSS; C & C++; Linux syst & ntwrk program; distrib syst; & technical comm through formal oral presentations.

#1615.3039; C or C++; Java; Jscript; AJAX; large syst sw design & dvlpmnt; & Unix or Linux.

#1615.6225; C & C++; Java; ARM assembly; multithread; Linux kernel internals; device drivers; Linux middleware, srvcs, or daemons; OpenGL; & mobile or embed application dvlpmnt.

#1615.2507; C or C++; Jscript & HTML; Linux ntwrk program; ntwrk monitor & perf; design client srvr protocol; design RESTful API; embed syst dvlpmnt; & multi-thread, synchronization, & IPC.

IT Corp., Aliso Viejo (Orange County), CA. has multiple openings at various levels for two positions: Project Managers to manage allocation, utilization cost, time schedules and standards with well-defined milestones. And multiple openings at various levels for Test Managers to manage allocation, utilization of quality and testing resources in the project. Exp. in Global Delivery Model. Excellent communications skills, able to communicate complex technical concepts to all levels. Excellent analytical and problem solving skills. Travel and/or relocate to unanticipated client sites throughout the US required. Bachelor's Degree with 2 to 5 years of exp. or Master's degree with 2 years exp. Mail resume & position desired to Job Number 001RAUST - Attn: Coleen Ryan - UST Global Inc. 20 Enterprise 4th Floor, Aliso Viejo, CA 92656

Database Analyst (Englewood, CO) Lead database analysis/devt for enterprise level public retirement benefits IT projects. Req Bachelor or equiv combination of degrees in CSci/application or MIS & 5-yr progressive exp w/ software devlt occupations related to the job. Master or equiv degrees in the same specialty w/3-yr exp in the required jobs also acceptable. Exp should include enterprise-level govlt benefits mgmt IT projects using MS.Net, C#, SQL Server database devlt & data modeling, Crystal Reports. Send salary reqt & resume to: HR, Sagitec Solutions, 422 County Rd D East, Little Canada, MN 55117.

JavaScript Software Engineer, Constant Contact Inc., Waltham, MA. Work with our Java Engineers & user exp. group to create highly interactive web apps & services. Min Reqts: BA (foreign equiv. accepted) in CS, CE or rel. & 4 yrs. of exp. in any position using Agile methodologies to build highly scalable websites & web-based apps for small business to high volume consumer websites, or in the alternative, MSc in CS, CE or rel. & 2 yrs. of exp. using Agile methodologies to build highly scalable websites & web-based apps for small business to high volume consumer websites. Any suitable combination of education, training or exp. is acceptable. Mail resumes to Matthew Elliott, Human Resources Business Partner, Constant Contact, Inc. 1601 Trapelo Road, Waltham, MA 02451 w/ref to Job Code CC2413. No calls please.

IT Company has multiple openings for Software Developer at its headquarters in Irvine, CA. Resp. for apps dev. & deployed meet the reqs. for Reliability, Availability, Scalability, Performance & Security. F/T Reqs. Bachelor's Deg. +2 yrs. Exp. in job or rltd occupation. Must have 2 yrs. exp. with PowerAgent Software. Travel and/or relocate to unanticipated locations within US req w/ expenses paid by employer. Send ad & resume to Envision Financial, ATTN: HR Director, 18101 Von Karman Ave., Ste. 1420 Irvine, CA 92612

IT|careers

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: Keeshla Moultrie. Please reference job # below:

Information Architect (Mountain View, CA) #1615.2132 Design information architecture for Google's Internet products and services. Exp incl: prod & consumer business models; user-centered design; data analysis, usability, & user research; internet mrktng strategies, trends,& practices; coordination with Intl teams on global proj; global-scale website design; database & content mgmnt syst; content strategies & branding; HTML & CSS; Jscript & Django templating systs.

Software Engineer in Test (Mountain View, CA) #1615.3771 Design, develop, modify, and/or test software needed for various Google projects. Exp incl: algorithms; design patterns; test automation; C & C++; Java; Shell; Linux; & Android.

Software Engineer Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.2683 srvr side technologies; AJAX, HTML, & CSS; Jscript; MVC frmwrks; UI design w/tools & Omnigraffle; large scale highly distrib web application infrastruct; data aggregation & analysis using MapReduce, Hadoop, Bigtable, or HBase; infrastruct & frmwrks test w/ WebDriver, JUnit,HttpUnit, Jasmine, & JSTestDriver; & design of large scale syst.

#1615.5945 OO language; web tech, incl HTML5 & Jscript; & API & dvlpmnt tool design.

#1615.2661 Java, HTML, AJAX, & Jscript; multi-thread program; storage & analysis of large scale data; data struct & algorithms & complexity analysis; & large-scale distrib syst.

#1615.5296 design & dvlpmt of ntwrk &/or switch mgmnt components; L2 and L3 switch & standard ntwrk protocols; dvlpmnt of device & ntwrk mgmnt syst; embed syst; C, C++, or Python; & ntwrk syst.

#1615.1857 C &/or C++; Java; data struct, algorithms, & sw design; database design; API design & use; large-scale systems; & internet technologies used for web dvlpmnt

#1615.3868 design & implement of sw syst; analysis & troubleshoot sw syst; data mining, mach learn, & optimization algorithms; data struct; design of algorithms & complexity analysis; & C, C++, or Java.

#1615.5687 mach learn algorithms & techniques; probability & stats; MapReduce; distrib syst; OO syst design & dvlpmnt; test & debug complex sw syst; adv data struct & algorithms; C++; Java; shell script; Perl; Unix; & online Ads clicks & conversions modeling.

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Computer Professionals (multiple openings): 1. Involve in all phases of SDLC process. Work includes architecture, analysis, design, develop, implementation, customization, & maintenance of applications & systems using Rational Rose, UML, SOA, IIS, Biztalk, Oracle, SQL Server, ASP.net, VB.Net, C#, Sharepoint Portal, VB, ASP, HTML, JSP, MTS, Unix & Win NT/2000/XP. BS/Equi (will accept 3yrs college + 2yr exp as equi to BS) in CS, MIS, CIS, Math, or related field W/2 yrs exp & ref BVP-06-2013. 2. Conduct project execution in global delivery model of projects using methodologies such as, Waterfall & AGILE – SCRUM. Work on projects & engagements for insurance industry customers. Involve in all phases of SDLC process. Work includes analysis, design, develop, implementation, customization, & maintenance of applications & systems using Rational Rose, UML, Webservices, Linq, IIS, Oracle, SQL Server, ASP.Net, VB.Net, C#.Net, Sharepoint Portal, Crystal Reports, Pervasive Integration Tool, VB, ASP, HTML, Java Script & Win NT/2000/XP. MS (BS + 5 Years) in CS, MIS, CIS, Math, or related & ref MA-06-2013. Salary DOE. Location: South Plainfield, NJ & other client locations. No telecommuting. Send res/cl to: Recruitment Manager ValueMomentum Jobs@valuemomentum.com

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Infosys Public Services, Inc. has multiple, full-time openings in Rockville, MD and various unanticipated locations throughout the U.S. Equal Opportunity Employer M/F/D/V. Please apply online at: http://www.infosys.com/careers/apply-now/us-jobs.asp and search for the job # below. Apply to each job # of interest.

Project Managers-U.S. (Testing) needed in Rockville, MD, and various unanticipated locations throughout the U.S. to perform activities to ensure that quality software work products are delivered on schedule, including coordination with clients and internal teams across the globe. **(Job# 1713BR).**

Business Development Associates (Healthcare) needed in Rockville, Maryland, and various unanticipated locations throughout the U.S. to perform competitive analysis of U.S. healthcare market segment and identify prospects within healthcare clients to enhance market share. **(Job# 1714BR).**

Experis US, Inc., is actively recruiting for the following positions in metro Milwaukee, WI.

Computer Systems Analysts - Code #MKE200

Treasury IT Analysts - Code #MKE210

SAS Business Analysts - Code #MKE220

Software Engineers 3 - Code #MKE230

Roving employment to varying jobsites throughout the US. Please refer to appropriate job code when submitting resume to: Experis US, Inc., Attn. Robin Block, 100 Manpower Place, Milwaukee, WI 53212 or rblock.resumes@experis.com EOE/MF/DV.

Senior Software Engineer: Design & develop Innovative software for next-generation Visual Analytics & Collaboration suite. Req Bach or foreign equiv degree in Comp Sci, & 5 yrs of progressive, post-baccalaureate exp in: Design, implement & test comp sw utilizing C++ & C#; Perform test automation, unit testing, & scenario-based testing for comp sw; Develop sw projs utilizing multi-threaded programming, Visual Studio, Win32 & Windows tools & techs; & Perform debug, build test libraries, write test code, & measure code coverage. Exp must Include 3 years exp utilize Graphics Processing Units to perform General-Purpose Computations (GPGPU). Experience in the above skills may be gained concurrently. Position at Tableau Software In Kirkland, WA. To apply, please e-mail resume and cover letter to jobstableau@tableausoftware.com

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Systems Analyst, Milpitas, CA & other client locations: Resp designing, developing, maintaining business & functional requirements of s/w applns & systems. Involve In all aspects of SDLC, including systems analysis, design, test planning & QA & continuous support for enterprise applns using principles of Comp & Systems Eng & Analysis with BI & Data warehouse. Develop functional design & specs, business process analysis, use case scenarios, & test cases of various applns using Oracle PL/SQL, Data warehouse, SQL Server, TFS, SharePoint, SSRS, SAP Business Objects & Reporting, BI, Web Services, Informatica ETL, Xilinx VHDL, C++, Excel VBA, CSS Web design, & Win. MS in CS, CIS, MIS, Eng (any), or related W/2yrs exp. Salary DOE. Mail resumes Proximous, Inc, 1313 N. Milpitas Blvd, Suite #167, Milpitas, CA 95035 or email careers@proximous.com

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Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: Keeshla Moultrie. Please reference job # below:

Software Engineer (Kirkland, WA) #1615.5127 Design, develop, modify, and/or test software needed for various Google projects. Exp incl: C++ or Java; dev. of middle tier srvcs & data; OOD; & mach learn & data analytics.

Software Engineer Postion (Seattle, WA) Design, develop, modify, and/or test software needed for various Google projects. Exp incl: #1615.5154 C or C++; Java; Unix or Linux; OOP; data struct, algorithms, & sw design; mach learn & comp vision; & distrib syst.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: Keeshia Moultrie. Please reference job # below:

Software Engineer Positions (Kirkland, WA) Design, develop, modify, and/or test software needed for various Google projects. Exp Incl:

#1615.5822 sw dvlpmnt inv large-scale data analysis; C++; SQL & database syst; multi-thread program; & debug.

#1615.2899 Java; GWT; MVP; Jscript; HTML; CSS; distrib syst; & multithread.

#1615.4234 C & C++; stat & probability; OOD; & data analysis exp incl MATLAB associated tools.

Software Engineer Position (Seattle, WA) Design, develop, modify, and/or test software needed for various Google projects. Exp incl: #1615.3749; Java,C, & C++; database query languages; parallel & distrib comp; distrib database sys; location based syst; & large scale data process syst.

BlackBerry Corporation (aka Research in Motion Corporation (US)), Sunrise, FL, positions are available:

FL7059 - Interoperability Test Specialist

BlackBerry Corporation (aka Research in Motion Corporation (US)), Cary, NC positions are available:

NC7060 - Software Developer

BlackBerry Corporation (aka Research in Motion Corporation (US)), Parsippany, NJ positions are available:

NJ7061 - Field Test Specialist

Work must be performed from employee's home location. Travel required up to 50% of the time. Full driving license and eligibility to cross national borders required.

Submit resume to BlackBerry Corporation, P.O. Box 141394, Irving, TX, 75014-1394 U.S.A., referencing appropriate job title and requisition number.

IT Corp., Aliso Viejo (Orange County), CA has multiple openings at various levels for Business Analyst Will work independently to define, test and implement project functional requirements; Design and Execute functional test procedures. Exp. in Global Delivery model. Excellent communications skills, able to communicate complex technical concepts to all levels. Excellent analytical and problem solving skills. Travel and/or relocate to unanticipated client sites throughout the US required. Bachelor's Degree with 2 to 5 years of experience. Mail resume & position desired to Job Number: 002RAUST - Attn: Coleen Ryan - UST Global Inc. 20 Enterprise 4th Floor, Aliso Viejo, CA 92656

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: Keeshia Moultrie. Please reference job # below:

Web Developer Position (Mountain View CA); #1615.5108 Design, develop, modify, and/or test Google's web-based systems, architecture, and related features .Exp incl: web dvlpmnt using HTML, CSS, & Jscript; Ruby; Ruby on Rails web frmwrk; Unix based oper syst; HTTP protocol; OOD & dvlpmnt; & dvlpmnt using Social Network APIs.

Software Engineer Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.6871; program models, frmwrks, runtime syst & libraries for parallel & distrib computing; distrib messaging syst; primitives for expressing concurrency; perf analysis & optimization of large scale parallel sw; numerical algorithms, data mine, or mach learn; C++ & Python; version control; build syst; debug & profile w/ tools; script or Interpreted script lang; & data struct, algorithms, & use in sw design.

#1615.6506 algorithms & data struct; dvlpng syst in OOP, incl Java & C++; dvlpng large scale distrib syst using map reduce syst & pltfrms; & dvlpng applications using relational databases.

#1615.928 comp syst & ntwrks; large-scale data process; high-perf process; C++ & Java; & info retrieval.

#1615.1164 large-scale data index & process; program in C, C++, or Java; design & dvlpmnt of large & distrib syst; UNIX or Linux; seb technologies; OO technologies; data struct, algorithms & sw design; & database design & SQL.

#1615.3356 C, C++, Java, Python, Jscript, or AJAX; Unix or Linux; data struct, algorithms, & sw design; & TCP/IP or ntwrk program.

#1615.6942 C & C++; STL; Python; shell script; Unix; data struct & algorithms; mach learn; distrib compute; & Info extraction & natural lang process.

#1615.5438 design & implement sw syst; analysis & troubleshoot sw syst; data mine, mach learn, & optimization algorithms; data struct; design of algorithms & complexity analysis; & C, C++, & Java.

IT Corp., Aliso Viejo (Orange County), CA has multiple openings at various levels for Systems Analysts – General; Java; Microsoft and Mainframe. Will collect, review, analyze and recommend technology and tools; Use independent judgment and discretion to analyze computer system capabilities; Knowledge and hands on exp. of Software Development life cycle. Exp. in Global Delivery model. Excellent communications skills, able to communicate complex technical concepts to all levels. Excellent analytical and problem solving skills. Travel and/or relocate to unanticipated client sites throughout the US required. Bachelor's Degree with 2 years of experience. Mail resume and position desired to Job Number: 004RAUST – Attn: Coleen Ryan – UST Global Inc. 20 Enterprise 4th Floor, Aliso Viejo, CA 92656

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Keeshia Moultrie. Please reference job # below:

Technical Account Manager; San Francisco, CA; **#1615.1045**; Provide technical support for Google's strategic partners to ensure the development and launch of new company products. Exp incl: technical & consultative support for internal &/or external clients; sw prod dvlpmnt & launch; proj mgmnt coordinate work of other technical resources; cross-funct teams incl technical & client-facing peers; UNIX &/or Linux pltfrm; program in Java, XML, HTML & SQL; & internet products & technologies. Trvl req'd.

Software Engineer Positions (San Francisco, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp incl

#1615.3965 large syst sw design & dvlpmnt; UNIX or Linux; data struct & algorithms; dvlpmnt of srvr-side code for web-based applications; prototype dvlpmnt; dvlopmnt of robust high-vol production applications; srvr Java web application dvlpmnt; & multithread program.

#1615.3951 C or C++; dvlpmnt, deplymnt, maint, & operation of distrib sw infrastruct & distrib file syst; dvlpmnt, deplymnt, maint, & operation of automated perf test syst; Low-level Linux kernel dvlpmnt & test, incl kernel source code, ELF binary format, shared libraries, & interaction betw. Linux OS & user-space prog; dvlpmnt, patching, modification, integration, & maint of open-source sw; & OO lang.

Senior Software Engineer (New York,NY) IT company: Master's + 2yrs of exp (Comp Sci, Engineering, Math, Information Systems or related field)- Develop, create & modify general computer applications s/w or specialized utility programs. Analyze user needs & develop s/w solutions. Design s/w or customize s/w for client use with the aim of optimizing operational efficiency. May analyze & design databases within an application area, working individually or coordinating database development as part of a team, using Java, XML, RMI, JDBC, Java Security, JSP, Servlets, Java Mail API, Coldfusion, HTML, DHTML, IBM Visual Age, IBM Websphere Server, IBM Websphere Studio. Travel, Relocation to various unanticipated sites within the U.S. may be required. Apply w/2 copies of resume to HR, Jean Martin Inc, 551 5th Ave, Ste#1425, NY 10176

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Keeshia Moultrie. Please reference job # below:

Quantitative Analyst (NY,NY) **#1615.5716**; Research Methods for improving Google technology. Exp incl: stat modeling; mach learn methodologies; design experiments; theoretical stats; stat computing, incl R, Matlab, C++, Python, & Perl; & optimization theory;& optimization theory; & algorithms for modern massive data set analysis.

Software Engineer Positions (NY, NY) Design, develop, modify, and/or test software needed for various Google projects. Exp incl:

#1615.4204; C++; Python; STL; parallel & distrib computing; Linux syst; OOD; data struct; adv algorithms; & basic stats.

#1615.6311; C++, protocol buffers, MapReduce, or Hadoop; Bigtable, HBase or Cassandra; write or maint of C++ application program interface; randomized controlled trials or A/B test; & design of large distrib syst. Trvl req'd.

#1615.4580; Scalability & distrib syst; DSLs & lang design; perf optimization; & Java core dvlpmnt.

#1615.2123; dvlpmnt, test & enhancement of prod &/or syst utilities; design, implementation, test & maint of sw. syst.; C# or Java; HTML & CSS; handling of secure data; automated testing frmwrks; concurrent program; & SQL.

#1615.5456; C, C++ &/or Java; multithread; STL (C++) &/or JDK (Java); large-scale, distrib & adv algorithm design; & parallel computing.

#1615.3924; Java; Jscript, C++, or Python; script languages; test & mocking frmwrks; version control syst,; continuous integration syst; mgmnt & implement SDLC; & multithread.

IT Corp., Aliso Viejo (Orange County), CA has multiple openings at various levels for Software Architects – General; Java; Microsoft and Mainframe. Independently design, document and develop software architecture and high level design for large or mid-size projects; Exp. in Global Delivery model Excellent communications skills, able to communicate complex technical concepts to all levels. Excellent analytical and problem solving skills. Travel and/or relocate to unanticipated client sites throughout the US required. Bachelor's Degree with 2 to 5 years exp. Mail resume and position desired to Job Number 003RAUST - Attn: Coleen Ryan - UST Global Inc. 20 Enterprise 4th Floor, Aliso Viejo, CA 92656

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: Keeshia Moultrie. Please reference job # below:

Test Engineer (Mountain View, CA) **#1615.1293**; Design, develop, modify, and/or test software needed for various Google projects. Exp incl: Linux; SQL; Perl; Jscript, & shell script.

Information Architect (Webmaster) (Mountain View, CA) **#1615.2035**; Design, develop, modify, and/or test Google's web-based systems, architecture, and related features. Exp incl: HTTP & web technologies; web applications & web srvcs; Python &/or Java; & NoSQL, HTML, CSS, JSON,&/or Jscript.

User Interface Designer (Mountain View, CA) **#1615.711**; Define the user model and user interface for new and existing Google products and features. Exp incl: application design; wireframe interactions & flows; design of hi-fidelity final mock ups & redlines used in UI implement; prototype interaction flows using HTML, CSS, & Jscript; & Adobe suite of prod.

Software Engineer Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.2510; C++; Python; algorithms; concurrent program; & dvlpmnt of distrib sw.

#1615.1178; Java; distrib syst; large scale storage syst; concurrent syst algorithms; & data struct.

#1615.977; JAVA, Jscript, Python, SQL, & Linux shell prog; web application front end, incl HTML, CSS, & GWT; large-scale web application dvlpmnt; large-scale data storage & index; info retrieval & version mgmnt; parallel & distrib comp; & distrib storage syst.

#1615.517; OO sw design; test & debug; quant data analysis; anomaly detection procedures; C++ & Java; parallel, distrib, & fault-tolerant comp; & large scale data process & analysis.

#1615.2513; android dvlpmnt; entityresolution; Record Linkage Theory; large scale distrib syst, distrib file syst, & distrib database syst; fault tolerance & recovery methods for distrib syst; cloud computing; Java, Python, & SQL; & parallel algorithms.

#1615.3590; design & implement consumer-lvl applications; C#, Java, Object-C, Python, C++, C, Matlab, & MapReduce; HTML, Jscript, CSS, Bash, SQL, & Linux syst; NoSQL large scale databases; algorithms & parallel program; dvlpmnt of full-stack data visualization syst; implement & debug multi-layer real-time ntwrk-connected syst; unit test, functional test, & con't integration test; design & implement of multithread web & mobile applications; dvlpmnt ads-embed mobile applications; & sw internationalization & localization.

#1615.1747; Java; C, C++, Python, Haskell, & SQL; application prog interface design; prod syst monitoring, release, & debug; adv concurrent algorithms; oper syst; ntwrk infrastruct; multithread design; & test dvlpmnt.

#1615.3601; algorithms; Java; info retrieval; OOP; & data struct.

#1615.3395; struct & interpretation of comp program; data struct & algorithms; oper syst & syst program; mach struct & logic design; & Java, C++ & Python.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: Keeshia Moultrie. Please reference job # below:

Partner Development Manager (Mountain View, CA) **#1615.6235** Drive Google's high-impact strategic content partnerships. Exp incl: bus dvlpmnt in sw, hw or internet-related technologies, prod mgmnt in hi-tech or internet industry, or prod mrktng in internal or technology environ; cloud computing models, incl IaaS, SaaS, & Paas; program paradigms in internet-focused prog lang, incl HTML, XML, Java, C#, Python, & Perl; high-perf & cluster comp frmwrks, incl Hadoop, Beowulf, & MPI; virtualization tech, incl Xen, VMWare, & KVM; & stat techniques, incl sensitivity analysis & customer segmentation. Intl trvl req'd.

Technical Analyst (Mountain View, CA) **#1615.1848** Formulate, implement, and continuously evolve Google's innovative internal technology tools for HR projects, processes, and systems. Exp incl: UNIX shell script & syst. admin.; Linux; AJAX, HTML, & CSS; Java, Python, & Jscript; db & web app. dvlpmnt.; syst-level & app.-level prog; dvlp extensible, modular, flexible, & scalable sw syst.; dvlp interactive, customer-facing web sw prod & automation tools; dependency injection, distrib syst., & multithread; rel. db, cloud storage, search syst, & web srvcs; eval & deploy web client & srvr-side technologies on UNIX sys; & mgmnt of dvlpmnt cycle of large-scale sw syst.

Web Solutions Engineer (Mountain View, CA) **#1615.3572** Design, develop, modify, and/or test software needed for various Google projects. Exp incl: multi-thread program; distrib computing; web application dvlpmnt; Java, Python, or Ajax; database mgmnt; Linux &/or Unix; API design; OOP for backend; XML; & JSON.

Hardware Engineer (Mountain View, CA) **#1615.2560** Design, develop, modify, and/or test hardware needed for various Google projects. Exp incl: design of complex srvr syst arch, with power, footprint, & perf req. & constraints; hw schematics & CAD drawings; HDD tech, incl hw & firmware; non-volatile storage tech, incl SSDs, Tapes, & Opticals; design of proj roadmaps for multiple prod areas; & neg. of prod features & tech requirements with multiple suppliers.

Software Engineer Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.4482 C++ or Java; HTML, CSS, & Jscript; web app. dvlpmnt; dvlpmnt of scalable distrib syst; & rapid prototyping.

#1615.1825 pattern classification & mach learn; stat analysis; estimate & detect; statsignal process; optimization theory; num. algorithms; time series analysis; adaptive filtering; adv program lang C, C++, & Matlab; & Java.

#1615.947 C++ &/or Java; design & impl. scalable distrib syst; test-driven dvlpmnt; Agile dvlpmnt; SQL; & dynamic typed lang.

#1615.2024 high perf comp arch; high perf compute; firmware & device driver design; design, implement, & delivery of complex sw syst; & C, C++, & Python.

#1615.5358 C++, Java, or Python; OOD; & SQL database design.

#1615.5467 backend sw dvlpmnt; C or C++ with STL; multithread program; script lang; Linux script lang; data analysis lang or data mine lang; mach learn, info retrieval, data mining, or nat lang process; large scale data storage; perf tuning & debug; & MapReduce, Hadoop, or distrib compute.

#1615.5220 C & C++; STL; multithread; algorithms & data struct; & large-scale syst.

#1615.419 mgmnt of dvlpmnt & scaling of complex, mission-critical solutions; dvlp sw prod through entire prod lifecycle, from conceptualization to delivery; Gather user requirements & translation to funct specs.; OOP langs., e.g., C++; Web 2.0 app dev.; modern web dev. langs., e.g., Jscript, HTML5, Ajax, or CSS; & analysis of perf issues, incl data mining, synthesis, & display.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: Keeshia Moultrie. Please reference job # below:

User Interface Designer (Mountain View, CA) **#1615.3361** Define the user model and user interface for new and existing Google products and features. Exp incl: UI frmwrk w/ large user base; info architecture tools; HTML, CSS, & Jscript; interaction design tools; motion design tools; background in industrial design, visual design, or graphic design; & user research.

Software Engineer Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.3758 C++ or Java; design, implement & test complex parallel & distrib syst sw; & algorithm design.

#1615.3730 image process, comp vision, & mach learn; digital photography, image quality, & computational photography; C++; & optimization in imaging.

#1615.6498 info retrieval; large scale distrib syst; develop, test, & maintainweb srvcs; Java or C++; & analyzing user actions & preferences.

#1615.5655; large scale data process; high perf process; & Java, C++, or C#.

#1615.2056 stat mach learn; Image process; visual object detection, track & recognition algorithms; image & video retrieval; probabilistic inference; & parallel computing.

#1615.1795 C++, Jscript, HTML & CSS; data struct; algorithms; OO sw design; & System program.

#1615.4192 C++; Python; sw debug; distrib syst, incl inter-process communication; & multi-thread program.

#1615.5691 data struct, algorithms, & sw design; distrib storage & consistent storage; program In C, C++, or Java; OO tech; design, implement, & optimization of storage syst serving paths from ntwrk syst to storage layer; & large multi-thread syst sw, incl sw design, dvlpmnt,& test using Linux or UNIX.

#1615.470 distrib syst implemented w/OO patterns in C++ & Java; distrib parallel process w/ MapReduce frmwrks; semantic web technologies; & data mining.

#1615.2688 C & C++; algorithms & data struct; database design, implement, index, & RDBMS paradigms; distrib syst & algorithms; syst program; UNIX or Linux environ; & assembly program lang.

#1615.5102; Ruby on Rails; HAML & SCSS; Jscript & jQuery; SQL in large scale environ; RSpec or Cucumber; Google+, Facebook and Twitter API's, OAuth; source control workflows, incl GIT; & Agile Practices, incl Scrum & XP.

#1615.6921 C; C++; Java; data struct; algorithms; & sw design & implement.

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Developer Advocate (Mountain View, CA) #1615.5130 Assist Google clients in adapting Google technologies to meet client business needs. Exp incl: Java, PHP, Python, Ruby, .NET, or Jscript; draft white papers, tech docs, or blog posts addressing tech & implementation issues; provision tech direction & support to third party co in implementation of tech prod; & comm of tech strategies & directions to c-level execs.

Software Engineer Positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. incl:

#1615.3659 OOD, incl design paradigms; coding practices, incl design document, unit test, peer code reviews, & agile methods; & C++ &/or Java.

#1615.1971 sw dvlpmnt; C, C++ , & STL; large-scale data index & mach learn; info extract; distrib computing; search syst; & struct data extraction & interpretation

#1615.1197 full-stack dvlpmnt of web apps; dvlpmnt of data pipelines & analysis tools; Java & Python; & scalable database syst.

#1615.5318 Java, C++, &/or Python; HTML, Jscript, & CSS; XML & SOAP; data struct & algorithms; parallel & distrib program; UI & UX design; sw prod life cycle; release eng'g; sw QA; visualization of large data sets; & scalable internet arch.

#1615.50; OOP; C++; Python; relational databases; design & dvlpmnt of large-scale distrib syst; & dvlpmnt tools on Linux.

#1615.5205 C++, Python,& Bash; MapReduce, Borg, & Stubby; large scale distrib syst design & web search log analysis; search index syst design & implement; design & eval of live experiments; struct data extract & struct analysis; & Flash content extract.

#1615.6965 iOS; obj-C & Java; game dvlpmnt for app behavioral mechanisms; & embed webview program & Jscript.

#1615.3769 C, C++, Java, &/or Python; algorithm design & data struct; syst sw design & dvlpmnt; & UNIX &/or Linux environ & system calls.

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Software Engineer Positions (Kirkland, WA) Design, develop, modify, and/or test software needed for various Google projects. Exp incl:

#1615.7390 Java, C#, or C++; SQL; HTML & CSS; Jscript; OOP; design large scale distrib sys; multithread program; & web srvcs.

#1615.7131 C++ &/or Java; Unix &/or Linux; ntwrk protocols, incl TCP/IP & HTTP; multithread; prob & perf analysis of large scale distrib syst; design & dvlpmt of large-scale, multitiered, distrib sw apps, tools, systems, and services; sw syst design, dvlpmt, dplymnt, & debug; & implement syst in oo ang using web related protocols & specs.

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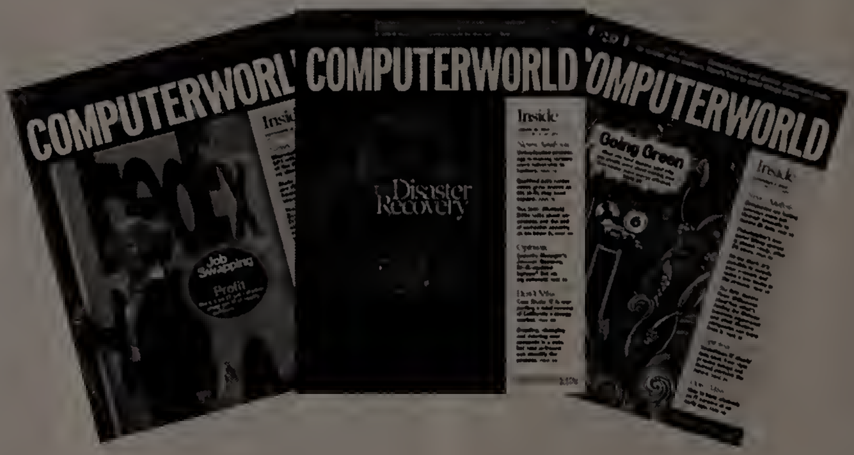

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SHARKTANK

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

HAL MAYFORTH

Welcome Back, Boss. When's Your Next Trip?

The office where this IT pilot fish works is constantly busy with more work than the staff can get done – and after months of 12-hour days, the boss decides to take a 10-day vacation on a different continent. "No one, including the boss, has any fear that we'll run out of work to do while he's gone," says fish. "The boss departs and stays in contact periodically just to see what's going on, but is not involved in any way with the day-to-day details of anything. The boss returns refreshed from his trip and the first thing he does is look at check-in reports, completion reports, etc. He pulls most of us over in a pleasant way to mention how much work we got done while he was away. We all thank him and get back to our seats. Once we sit down, the staffers all agree, via chat, that we would get more work done if the boss would get away more often."

That Noisy Data

These city employees working in the field upload data from their handheld devices to a PC every day, and mostly it works without a hitch, says the IT pilot fish they call when it doesn't. "One afternoon, I had a trouble call from a user who said that he could hear the data as it uploaded to the PC," fish says. "I asked him to explain what he meant and he said he had never heard the data transfer until that afternoon. I was very tempted to ask him to hold the upload cable in his hand to see if he could also feel the data upload. The mystery was solved when I determined that the PC he uploaded to had been replaced with one with a noisier hard drive. The end user was hearing the noise from the hard drive as the data was uploading. Perhaps I should have suggested that he wear earplugs during the upload."

Good Thing They Do Audits

Network security pilot fish is working for a big publishing company when something genuinely disturbing turns up in an audit. "I found over a million files that could be rewritten by almost anyone," says fish. "This was the result of the habit at the time of people just sharing the root of the C: drive. There were hundreds of files with names suggestive of sensitive data: *review, projection, budget, forecast*, etc. In addition to writing up the audit report, which was largely ignored, I added a sort of humorous test by creating a folder within the HR server titled 'If you find this folder, call . . .' and listed my personal cellphone number. The audit came and went. A couple years went by and I was laid off. Three years after I was laid off, someone finally called me and said, 'I found a folder name that said to call this number.' Once I explained, we both had a laugh over how long it took for that to be noticed."

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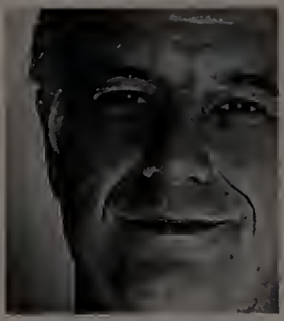

OPINION

BART PERKINS

Jousting for Jobs

> Coding tournaments have emerged as ways to identify highly skilled IT pros.

WE ALL WANT TO HIRE WINNERS. That's even more vital when we're trying to fill key technical jobs like programmer and architect. After you've taken the time to post the jobs, work with recruiters and sift through mountains of résumés, you'll still want to verify the technical skills of the applicants. That's where a contest can be helpful.

Over the past few years, coding tournaments and similar organized tests of IT professionals' abilities have emerged as a means of identifying skilled technical staffers. TopCoder, Interviewstreet, Codility, Siemens and others have created a series of contests to identify talented IT specialists. These competitions take the form of predefined skills tests, timed problem-solving challenges or online tournaments. Winners can garner financial rewards, job interviews or consulting contracts. Companies in need of top tech talent can check out the leaderboards that some of these tournament organizers maintain to see who's at the top in various categories, such as UI design, bug fixing and chip design.

Student competitions such as Intel's Cornell Cup also allow companies to identify rising stars. Winners are frequently rewarded with summer jobs, internships or offers of jobs after they graduate. Most university-affiliated student competitions are face-to-face events and therefore prove to be excellent venues for recruiting and networking. And some companies that have highly specialized technical needs have designed their own customized competitions for specific positions.

Employers can reap all kinds of benefits from such contests. In addition to finding talented IT professionals or garnering creative solutions to vexing problems, a company that sponsors a tech tournament has an opportunity to present itself as an appealing workplace where employees encounter interesting technical challenges. Sponsoring tournaments can also reduce a company's dependence on recruiters and job boards.

Of course, you should be aware that contests also present challenges, including these:

- Organizing a tournament requires a lot of planning. Among other things, you must clearly define the problem that contestants will be asked to solve and break it into discrete components, each of which could become a separate competition.
- If a tournament's challenge is tied to a specific project, the competition will expand the project's timeline. If the competitors already have jobs, they won't be focusing exclusively on your problem. In addition, you'll have to spend time evaluating entries after the competition closes.
- The top performers may not really have the skills you think they have. They may have received help from friends, so you should put them through additional testing during the on-site interview. And remember that tournaments usually reward people for their technical expertise, not soft skills such as the ability to work as members of teams.
- Winners of virtual tournaments may not be U.S. citizens and might need visas to work for you. And some of the entrants may have participated just for the fun of it; they may have no desire to relocate, and they might not even be looking for a job.
- Some tournament champions may be happy to work for you as contractors but would balk at the idea of becoming full-time employees.

Technical contests can help employers identify world-class talent and find people with highly specific technical expertise. If you keep all of the challenges in mind, a virtual tournament could provide an effective solution for your technical staffing needs. Let the jousting begin! ◆

Bart Perkins is managing partner at Louisville, Ky.-based Leverage Partners, which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.

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[1] Source: Intel® Performance comparison using SPECfp*_rate_base2006 benchmark. Baseline score of 266 on prior-generation 2S Intel® Xeon® processor X5690-based (3.46GHz, 6 core, 12MB L3, 6.4 GT/s, 130W) platform published at www.spec.org as of 6 Sept 2011. New score of 492 on 2S Intel® Xeon® processor E5-2690 (2.90GHz, 8 core, 20MB L3, 8.0 GT/s, 135W) published at www.spec.org as of 28 March 2012 using two Intel® Xeon® processor E5-2690, Turbo Enabled, EIST Enabled, Hyper-Threading Enabled, 128GB memory (16 x 8GB DDR3-1600), Red Hat* Enterprise Linux Server 6.1 for x86_64, Intel® Compiler 12.1.

[2] Results achieved by comparing recommended system to IBM System x3650 (with Xeon® E5205) using IBM Systems Consolidation Evaluation Tool (https://roianalyst.alinean.com/stgi/). The comparison is between IBM System x3650 M4 and x3650 (does not include x3650 M2 or x3650 M3).

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